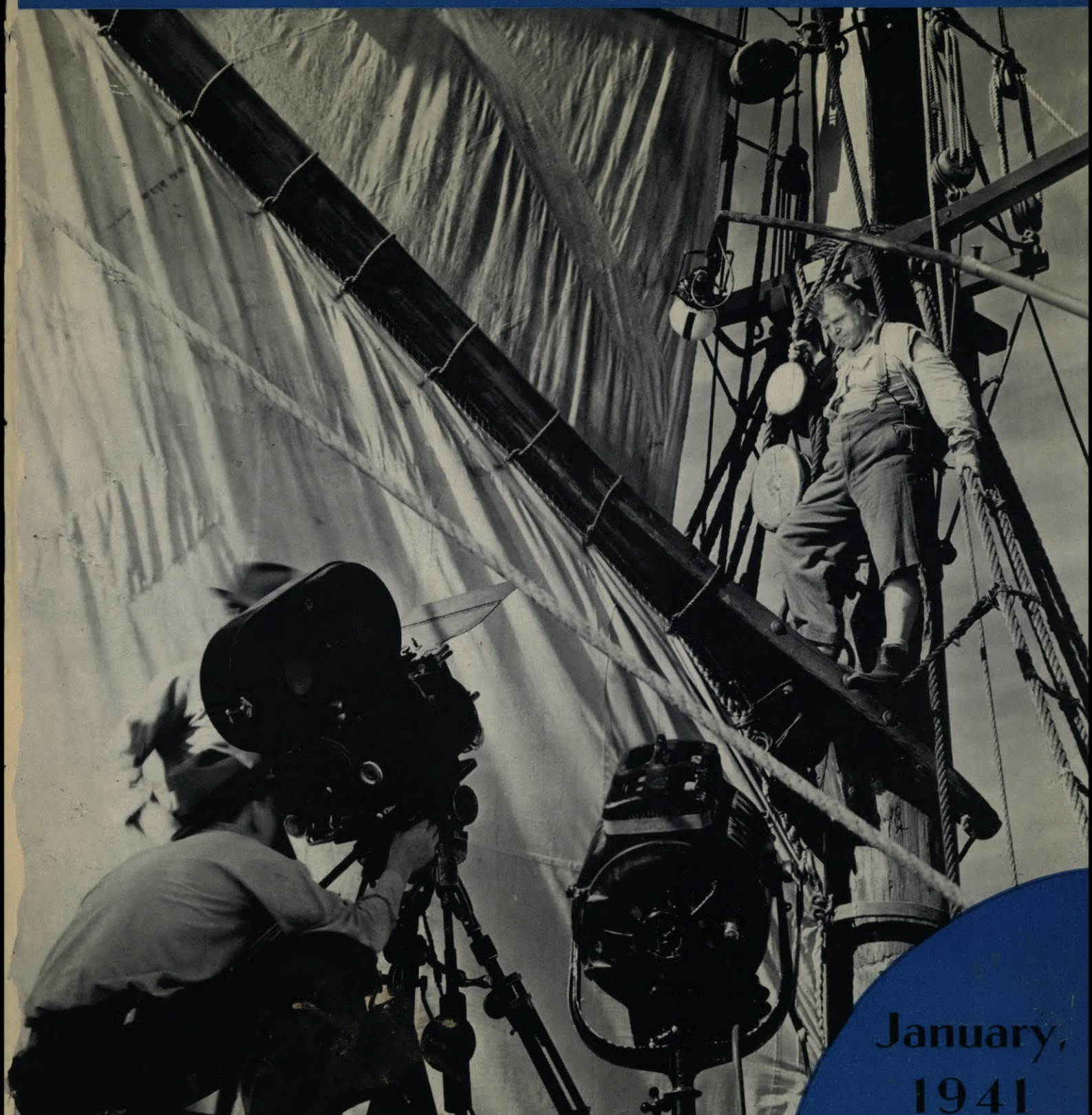
AMERICAN Cinematographer

25¢
FOREIGN 35c

☆ THE MOTION PICTURE CAMERA MAGAZINE ☆



January, 1941

DU PONT 35M/M Motion Picture Raw Stocks

Superior-3

Type 127

FILTER FACTORS

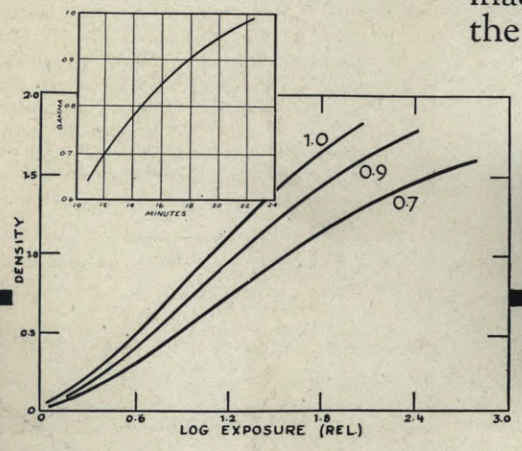
Filter	"Times" Factor	"Stop" Factor
Aero-1	1.5	¾
Aero-2	2.0	1
21	2.5	1¼
23A	3.2	1½
25A	3.2	1½
29F	5.0	2¼
15G	2.5	1¼
3N5	6.3	2½
5N5	8.0	3
25ND	1.8	1
50ND	3.1	1½
75ND	5.6	2½
100ND	10.0	3¼

"Double-Quick"

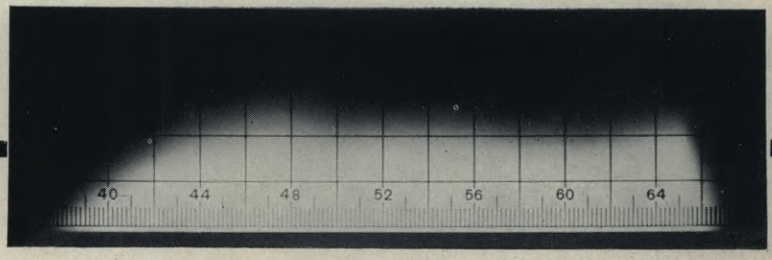
The over-all sensitivity of this film is approximately twice that of the usual studio negative. Yet for a high speed material, the image formed is remarkably fine-grained.

Scenes made on Superior-3 can be spliced readily with those taken on slower films. The contrast is variable within the usual working limits. Gamma for gamma, a 50% increase in developing time is required. This builds up the low-key detail without producing hardness.

Superior-3 possesses the stability, uniformity and wide exposure latitude typical of all Du Pont Cine Negatives. When shooting with poor or inadequate lighting, its extra speed frequently spells the difference between good and mediocre results.



DAYLIGHT SPECTROGRAM



DU PONT FILM MANUFACTURING CORP., 9 ROCKEFELLER PLAZA, NEW YORK, N. Y.

SMITH & ALLER, LTD., 6656 SANTA MONICA BLVD., HOLLYWOOD, CALIF.

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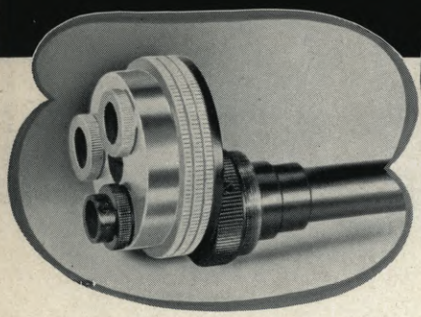
WITH THIS

"Positive" Viewfinder



YES sir—the Eyemo or Filmo 70 Camera that you now have can be brought right up to date by fitting to it the new Bell & Howell Positive Viewfinder and Viewfinder Turret which mounts three matching viewfinder objectives.

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NEW VIEWFINDER TURRET enables you to select matching viewfinder objective unit with same speed you pick the lens.

Mail the coupon now for details and cost of bringing your present Eyemo or Filmo 70 right up to the moment. Other new features may also be added—see coupon. Bell & Howell Company, 1848 Larchmont Ave., Chicago; 30 Rockefeller Plaza, New York; 716 North La Brea Ave., Hollywood; 13-14 Great Castle St., London. *Established 1907.*

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My Eyemo Serial No. is.....

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AMERICAN CINEMATOGRAPHER

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Vol. 22 **January, 1941** **No. 1**

CONTENTS

The Front Cover

This month's cover shows Sol Polito, A.S.C. and his camera crew filming a scene for "The Sea Wolf" for Warner Bros. on an outdoor set to match level-camera angles shot on the sets in the huge marine stage. Note the use of a 2000-Watt spotlight to lighten the shadow-side of player's face. Still by Mac Julian.

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Entered as second class matter November 18, 1937, at the postoffice at Los Angeles, California, under the Act of March 3, 1879.

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THE young lady may not know it—but she has something in common with Agfa 16 mm. Triple S Pan Reversible Film: balance!

Triple S Pan is accurately balanced in contrast. It permits good brilliance outdoors, yet avoids the harsh effects so often encountered under artificial light.

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Technical Progress in 1940

AS MIGHT be expected under the disrupted conditions with half the world at war, technical progress in the motion picture industry followed somewhat conservative lines during 1940. With but one or two exceptions, progress in the professional field was in details and logically expectable improvements of existing equipment, materials and methods. In the event of the two most notable exceptions, truly radical changes were brought forth, but the industry has proceeded cautiously with their acceptance.

Advancement in the amateur field followed somewhat similar lines. As was predicted here a year ago, with the war in Europe virtually cutting off the importation of high-grade European-made cameras, there has been a marked increase in the number and variety of comparable American-made types. Several welcome and decidedly needed new types of 16mm. and 8mm. cameras appeared, together with more or less undercover developments which indicate that the arrival of truly professional 16mm. cameras and production is growing closer to actuality.

Methods

A noteworthy advancement in methods was the erection by Warner Brothers' of a new stage especially for filming marine scenes. This stage is one of the largest, if not the largest in the industry, and capable of containing two large sailing-ship sets, each of which is capable of diagonal movement, and of being rocked in two planes by silent hydraulic mechanisms. Truly remarkable effects of sea and sky backgrounds in motion are also produced by use of a backing and projected ripple and cloud effects.

A development of considerable potential importance was the introduction of the so-called "Soundies"—nickel-in-the-slot continuous 16mm. sound projectors for use in cocktail lounges, etc. A number of the industry's prominent figures have announced intentions of entering this new field of production. At present, the bulk of these subjects are reduction-printed from 35mm., but some activity in direct 16mm. production is also noted, with more likely as time goes on. It is, at any rate, the industry's first widespread recognition of the possibilities of 16mm.

An interesting technical development was the announcement by DuPont engineers of a process of intensifying film products by partial fogging. This is done by exposure to a panchromatic safelight for intervals ranging from 25 to 40 minutes at a distance of 5 or 10 feet. This, coupled with a 50 to 75 per cent increase in negative developing time is said to give speed increases of from 2 to 4 times, and to be consistent in results. It has been publicized as "Latensification."

Another development, of more interest to scientific filmers than to practical production cinematographers, is the adaptation of the Edgerton high-speed flash to the making of stroboscopic, super high-speed motion pictures. Speeds up to 2,000 frames per second have been attained. A short-subject of this nature, "Quick As A Wink," has been produced and released by Metro-Goldwyn-Mayer as a Pete Smith short.

Film—Professional

The chief advance in professional (35mm.) motion picture raw film materials appears to have been the introduction by the Eastman and DuPont organizations of new types of infra-red sensitive film. Both of these are featured by considerably increased speed and in the latter case, by sensitization which gives a darker rendition of the chlorophyll in foliage.

During the year DuPont's super-speed film, known as Superior, Type III, came into use.

Distinctly significant, also, has been the use by several well-known Directors of Photography of super-speed films of this type—notably Eastman Super XX—as a production negative material. The results have been surprisingly satisfactory, though it is understood contrast and grain characteristics have been improved by giving the negative short-time development.

As might be expected, due to the war, exports of American 35mm. raw-stock fell off considerably. A U. S. Department of Commerce survey made midway in the year revealed a 15 percent decrease. Since then, the percentage of decrease is undoubtedly greater.

Film—Amateur

Comparatively few new substandard film products appeared during 1940. Agfa introduced a new, popular-priced double 8mm. product known as Agfa Twin-8 Panchromatic Reversible Film, and DuPont made a 16mm. acetate-base version of its well-known Superior, Type II, product available.

Agfa also began marketing the well-known Agfa Infra-Red negative film in several rollfilm sizes for still photography.

Color

Professionally, Technicolor retained its lead in the natural-color field, making several notable strides in processing methods. These included new methods of making matrices and prints, which resulted in increased contrast, better definition and color quality, and reduced costs. Technicolor release-print prices were reduced by one cent a foot.

Officially, Technicolor's long-predicted change to a monopack (Kodachrome-type) single negative which could be photographed in any 35mm. camera appears as far in the future as ever. However there seems to be considerable evidence that such a product is being used at least experimentally, and possibly for special scenes on production in instances where the bulk of conventional three-film Technicolor cameras would make the use of such cameras difficult or impractical.

An improved type of Dufaycolor is understood to be available. It is understood that Fr. Bernard Hubbard, the Alaskan camera-explorer, exposed a considerable amount of this product on his last expedition to Alaska. It is further stated that Dufaycolor film is to be made in this country and exploited commercially, with at least one major studio actively interested in the outcome.

The anticipated announcement of an American-made Agfacolor monopack color-film remains still in the future. However, it is known that American-made coatings are being produced experimentally, with results that are said to be excellent.

In the color-still field, Kodachrome continues in the ascendant. However, due in some part to the war, several excellent American-made one-shot color still cameras have been marketed successfully, several of them at popular prices. Among these may be noted the Curtis "Color Scout."

35mm. Professional Cameras

Nothing radically new appeared in this field. Despite the financial hardships incident to the wartime reductions of Hollywood's foreign market, several of the major studios have invested in new camera equipment. In several, the Mitchell "BNC" model has come into increased use, with some reported changing over completely to this instrument.

The Twentieth Century Camera, designed some years ago by engineers of the 20th Century-Fox Studio, has been put into production by Cine-Simplex, of Syracuse, N. Y. The studio is completely re-equipping its camera department with these new, blimpless units, ten having been ordered. After this order has been completed, the camera will be made commercially available by Cine-Simplex.

Substandard Cameras

Despite increasingly persistent rumors that at least one major manufacturer would announce a professional, studio-type 16mm. camera, nothing of this nature attained realization during 1940. At least three amateur cameras incorporating improved design reached the market, however.

Bell & Howell introduced an improved magazine-type 16mm. camera, equipped with a 3-lens turret and a matched-lens viewfinder system. This appears to be the first magazine-type camera so equipped.

Eastman introduced the Magazine Cine-Kodak 8, the first true magazine type double-8mm. camera yet built.

Non-reflection coating for lenses was an outstanding development of 1940. The 35mm. enlargements above show, left, test made with standard lens; right, test made with identical lens treated with non-reflection coating.

Revere, which during the previous year had entered the 8mm. field with a single-run 8mm. camera and an excellent projector, widened its field of activity by introducing a double-run 8mm. camera, licensed under the Eastman patents, and equipped with a 3-lens turret.

Lenses

The outstanding development in this field was the application to both new and existing motion picture lenses of various forms of non-glare coating. Several of the major Hollywood studios made varying use of existing lenses treated with the Vard "Opticoat" treatment. Others obtained new lenses, factory-treated with similar coatings from Cooke, Bausch & Lomb, and other manufacturers. All of the lenses on the new 20th Century cameras ordered by the 20th Century-Fox Studio were thus treated by Bausch & Lomb.

The chief advantages of this treatment are an almost complete elimination of internal flare when shooting into strong light-sources, a notable increase in apparent definition and contrast, and an increase in effective speed of between 1 and 1½ stops.

The lenses delivered to 20th Century-Fox by Bausch & Lomb were calibrated by special photometric methods devised by Supervisor of Photography Daniel B. Clark, A.S.C., which it is claimed give a more consistent measure of actual light transmission at any stop than previous methods.

Accessories—Professional

One of the most significant developments in the field of professional camera accessories is the built-in scene-slating device. Two of these designs were evolved independently by Paramount and 20th Century-Fox, and put into service almost simultaneously. While the two designs differ in detail, they are similar in principle. Each includes a miniature scene-slate to carry the necessary production data—scene and "take" numbers, etc.—an optical system to correct the focus of the camera lens while photographing the slate, and a self-contained illuminating system to provide adequate illumination of the slate. Both give a full-screen image of the slate, and both utilize the film ordinarily wasted in bringing the camera up to operating speed.

In both instances the use of the built-in slater is expected to effect worthwhile savings in production-time and film footage, while at the same time providing more legible slates—an obvious advantage in editing.

Another interesting device was the make-up comparator devised by Joseph Walker, A.S.C. This consists of a box containing a simple viewing field, a rotatable unit upon which four standard make-up shades may be applied, a variable light-source to illuminate the make-up standard, and a conventional General Electric photocell meter to measure the intensity of the internal light. In practice, the light is set to give a predetermined meter-reading. After this, the standard make-up is compared with the face-tone of the principal player, and the lighting on that player balanced accordingly, to produce a similar visual effect as seen through the comparator's finder.

Accessories—Amateur

No radically new amateur accessories seem to have appeared during the year. Both Bell & Howell and Fink-Roselieve brought out new motion-viewers for film-editing, while Craig brought out a popular-priced 16mm. "Junior" model. Bell & Howell introduced a new, automatic fading device for all 16mm. and 8mm. cameras. Several new tripods for sub-standard and still use were introduced.

Lighting

Perhaps the most notable development in lighting during 1940 was the increased acceptance of the so-called "dinky" spotlights for both professional and amateur use. The first of these tiny, 150-Watt units was developed by the Warner Bros. Studio last year, and subsequently marketed in modified form by Bardwell-McAlister as the "Dinky Inky." It is being used increasingly in motion picture studio camerawork. In addition, several other manufacturers have brought out similar lamps, among which may be mentioned the "Academy" and the Fink-Roselieve types. In addition to their professional use, these "peanut" spotlamps make spotlights for the first time available to the amateur at prices within reach of the amateur's purse. They are a direct result of the lower illumination requirements of today's high-speed film.

Several studios and cinematographers have experimented with the use of fluorescent tube units for soft front-lighting, especially in close-ups. While this type of lighting has not been widely accepted in motion picture use, its adaptibility to portrait still work has been immediately evident. A commercial unit of this type has been marketed by Bardwell-McAlister under the name "Fluor-o-photo."

Meters

The acceptance of photoelectric light-measuring instruments by studio cinematographers, noted a year ago, has continued to increase. Today it may safely be said that there are very few Directors of Photography who do not to some extent at least make use of these instruments. In at least one studio, they are used universally.

Early in the year, General Electric brought out a new and modernized model of their popular meter, featuring a triple brightness-range and greatly improved low-level sensitivity. Weston brought out a modification of their "Master" meter, specially designed and calibrated for cine use. In addition, Capt. Don Norwood reported some extremely interesting experiments with the use of modified Weston and other meters for incident-light readings.

Special-Process Cinematography

The first units of a completely new assembly of equipment for projected-background or transparency process work were put into use in several studios during the year. Among these units may be mentioned improved projection-lenses developed by Bausch & Lomb, an improved Mitchell process-projection head, an automatically-controlled, high-intensity projection arc lamphouse de-

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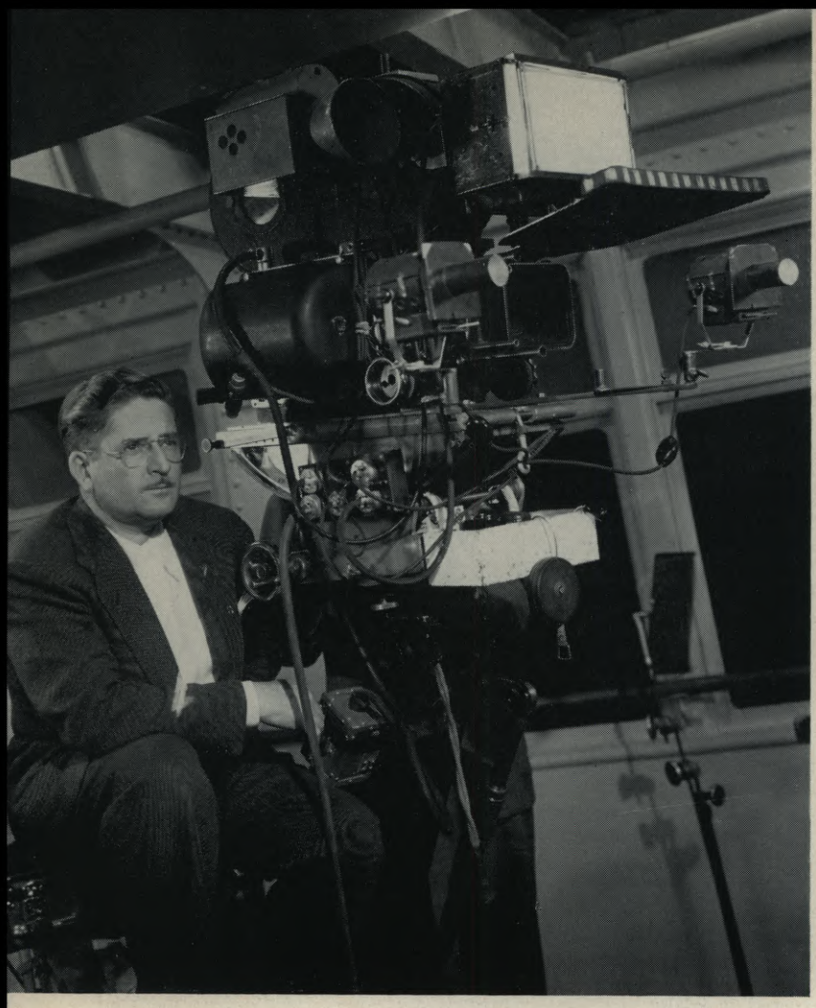

Aces of the Camera

1: WILLIAM DANIELS, A.S.C.

By WALTER BLANCHARD

IN the musical world there are a rare few musicians who have such complete technical and artistic mastery of their media that not only the general public, but also their super-critical fellow artists point to them as supreme examples of musicianly attainment. So, too, in the cinematographic world there are certain outstanding Directors of Photography whose work is eagerly studied by their fellow cinematographers as consistently flawless examples of what fine cinematography ought to be.

William H. Daniels, A.S.C., is one of these masters of the camera. He is a *cinematographer's* cinematographer. If you asked any member of Hollywood's closely knit and professionally hypercritical camera fraternity—from Directors of Photography down to film-loaders—for a listing of the ten best Directors of Photography, the name of Bill Daniels would stand high on virtually every list. Among the non-photographic members of the industry, his name would rate almost as high.

But from this don't jump to the conclusion that Daniels' camerawork is necessarily showy or spectacular. It isn't, for Bill Daniels is too completely the cinematographic artist to permit it. Superbly pictorial when the occasion legitimately allows, Daniels' camerawork is planned with but one end in mind: to present players and story so perfectly that the camera-treatment itself becomes merely the vehicle—although a perfect one—which brings story and characters to the audience. It must never call attention to itself.

Seeking this end, Bill Daniels has always striven to avoid what he considers the two greatest—though diametrically opposite—photographic pitfalls: on the one hand, routine, "formula" photography; on the other, exhibiting too spectacularly individualistic a style. He'll probably hate me for saying so, but in seeking to avoid these pitfalls, Bill Daniels has developed a style completely his own. Two successive Daniels pictures may not look in the least alike, yet both will be instantly recognizable to the camera-minded viewer by the sure precision that marks every phase of their camera treatment—a certain singing smoothness which for all its variety of technique and artistic mood is as distinctive as anything on the screen.

Dramatically and photographically, "Marie Antoinette" had nothing in common with "The Mortal Storm," "Ninotchka" or "Rose Marie"—yet all three of them share the imprint of the inconspicuously perfect execution which is Daniels' professional signature.

What sort of a person is this man Bill Daniels? Tallish, ruddy-faced, with red-brown hair and moustache and penetrating blue eyes, the first thing you notice about him is that like some of the more bewildering Irishmen of fiction, he seems somehow to be smiling internally even when he is most soberly concentrating on some perplexing production problem.

On the set, he exudes a curiously intermingled air of deft, easy-going competence with a strong sense of nervous dissatisfaction. The latter, I think, is dissatisfaction with himself, for in more than a decade I've never known Bill Daniels to admit that he was fully pleased with his achievements. He'll turn out a photographic job of Academy Award calibre—and even amid the backslapping of preview or premiere, if you ask him what he really thinks about it, he'll say it's "Pretty fair—I think I got about half of what I was aiming at."

But to his fellow workers, it's another story. One member of the crew of his current production—his second at Universal after a long and distinguished career at MGM—summed things up this way. "I've seen lots of cinematographers with big reputations," he said, "but when you come to work with them, they don't always live up to advance billing. But with this man Daniels, it's the other way around. He came to this studio a stranger—but today every one of us who has worked with him is for him 100%.

"You see how he's handling things over there now? Well, it's the same all the time. He never puts on an act—never raises his voice or makes a fuss over anything. But, man oh man, how he knows his stuff! He seems to know instinctively just where every light should go, how strong it should be,

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FILMING VICTORIA--CANADA'S "LITTLE BIT OF ENGLAND"

By CHARLES W. HERBERT, A.S.C.

THE travelogue cameraman can justly be compared with the prospector—both are always looking for new fields of operation. Some times they are far away in untried regions and sometimes they are near at hand by applying new treatments to "old diggings."

Just over the border, Canada, with its vast wilderness and its beehives of modern activity amid quaint settings, has always beckoned to the American cameraman. But strict government customs and working regulations for years made Canada one of the world's most difficult countries in which to work. For this reason, very little news or travelogue material made in Canada found its way to the screens supplied by American film producers. Recently the door to this picture field has been opened and more and more material can be expected to come from Canada to the American screen. This will result in a closer understanding of the problems and attractions of our neighbor—already bound tightly to us with a common language (in the greater part of the country) and similar needs throughout.

It should be encouraging to other newsreel and travelogue producers to know that I have recently returned from Canada where wholehearted co-operation for entry and work was generously arranged by the National Film Board. John Grierson, whom I knew in London while making a Magic Carpet there in 1933, was appointed to the post of Government Film Commissioner for the Canadian

Film Board in January, 1939. Recognizing the invaluable publicity that goes with the showing of news and travelogue reels, one of his first acts was to pave the way for closer co-operation with American film producers so that their cameramen could work efficiently in Canada.

After a chance meeting between the Film Commissioner and Thomas Mead, managing director of Universal Newsreel, my visit to Canada was planned. The entry into Canada was expedited by arrangements between Mr. Grierson and the Canadian Customs Office. After arrival in Victoria, the British Columbia Government Travel Bureau and the Victoria Tourist Information Office worked hand in hand to see that the best possible subject-matter was put in front of the camera. The filming was then routine, allowing us to concentrate on technical details.

Such an arrangement is naturally ideal for all concerned. It gives assurance to the government that a first class reel will be made which meets with its approval. And it also makes it possible for the producer to turn out a worthy job efficiently at minimum expense and trouble.

Victoria, located on Vancouver Island in British Columbia, is best reached by regular Canadian Pacific boat from Seattle. The trip takes about four hours across a generally glassy, smooth channel flanked by mainland and islands. Most cities have their docks for commercial convenience located in the most unattractive sections. Unlike others, Victoria docks are nicely arranged downtown so that, as you step ashore, you are right in the front yard of the historic Parliament Building and the impressive Empress Hotel.

This natural approach right into the heart of Victoria was the logical introduction to our reel. Although Army and Navy censorship regulations required that no pictures could be taken of the harbor without being presented to them for censorship, we were able to meet this requirement without getting the negative developed in Canada. An officer from the Intelligence Department was taken along each time we planned to make a shot that included any part of the harbor. When the camera was set up, he censored the scene on the spot by looking into the focusing tube where he could see the exact field covered by the lens. When he was certain that no prohibited areas were included, he gave us permission to take the scene. Canada may be under wartime regulations—but they are sensibly applied!

We arrived in Victoria in the fall when there is fog and mist with which to contend. Worst of all, up the island where huge lumbering operations were in progress, they were burning slash (branches and waste lumber) which smoked up most of the landscape. Fog and mist will usually clear away after the sun is high, but smoke stays around a long time until a rain settles it. I've learned that haze due to suspended particles in the air can be penetrated with a heavy red filter and particularly with Infra Red film, providing the haze lies between you and a distant object such as a mountain or landscape. But a general haze or smoke that makes all of the sky gray and obscures the sun is impossible to clear up by photographic treatment. Whenever this problem confronted us, we chose only subjects which did not include much sky or a great distant panorama. We made a lumbering sequence by selecting forest backgrounds or made shots looking down without including the sky.

Around Victoria proper we were not bothered at all with smoke, and the mist always cleared away without holding us up too much.

While it is very difficult to make every travelogue reel different, still the greatest aid when possible is to seek for and apply a general theme to the treatment of the reel. Victoria had one of those outstanding, obvious themes that was easy to follow. Being the capital of British Columbia, situated on Vancouver Island, sixty miles from the mainland, Victoria is truly a Little England, and this gave us the logical theme. Many of the down-town buildings had unmistakably English architecture, and these furnished the foundation for opening shots as well as fitting backgrounds for various sequences which followed.

In the introduction we needed "Little England" close-ups in addition to the general views. Two Royal Scotch soldiers in kilts were featured in the foreground of a street scene. A policeman with English Bobby helmet filled the screen for another shot with the Parliament Dome towering above him in the background. Flower gardens, typically English, were covered in full views and striking close-ups showing bees coming in for nectar. Flowers, in baskets hanging from lamp posts, were even found in the regular downtown beautification plan.

Here and there about the city were stately old homes built in true English style. They added dignity and a touch

of atmosphere. Down in one of the parks we picked up a nice series of shots of some men bowling on the green, and over in the library an effective shot of some retired men selecting newspapers from the novel newspaper rack. To complete the little touches of English atmosphere we shot a quick scene of a boys' school where the foreground was filled with fast action of a scrum in a rugby football game, and a girls' school with the students in traditional uniforms changing class.

With an introduction in the bag, we took to the upper country where a fast-moving sequence was made of the lumbering industry—spectacular views of giant tree-tops falling, loading with astounding machinery, hauling by colossal trucks as well as trains, and the dump yard down in the bay.

It was easy to keep away from smoke-obscured long shots in the dense forest as the tall trees naturally filled up all the backdrop space behind action close-ups of men chopping an undercut or sawing. Likewise the skidding tractors were so impressive that they only needed huge piles of logs for backgrounds. Logging is a rather ordinary subject but I tried to create some different shots by carefully selecting camera-angles that enabled me to make impressive scenes. When the cutters were chopping out the undercut, a wide-angle lens (for extra depth of focus) was used and the camera set so that one axe blade fell very close across the picture field; then as it was raised a waist close-up of the other man was visible as he brought his axe down.

Near a small town up the east coast of the island, there was an Indian Reservation. The Indian women were expert in the art of knitting heavy sweaters,

and the men carved out souvenir totem poles. These were home crafts and we found that it was just about impossible to make complementary scenes in the Indian homes. Besides only one person

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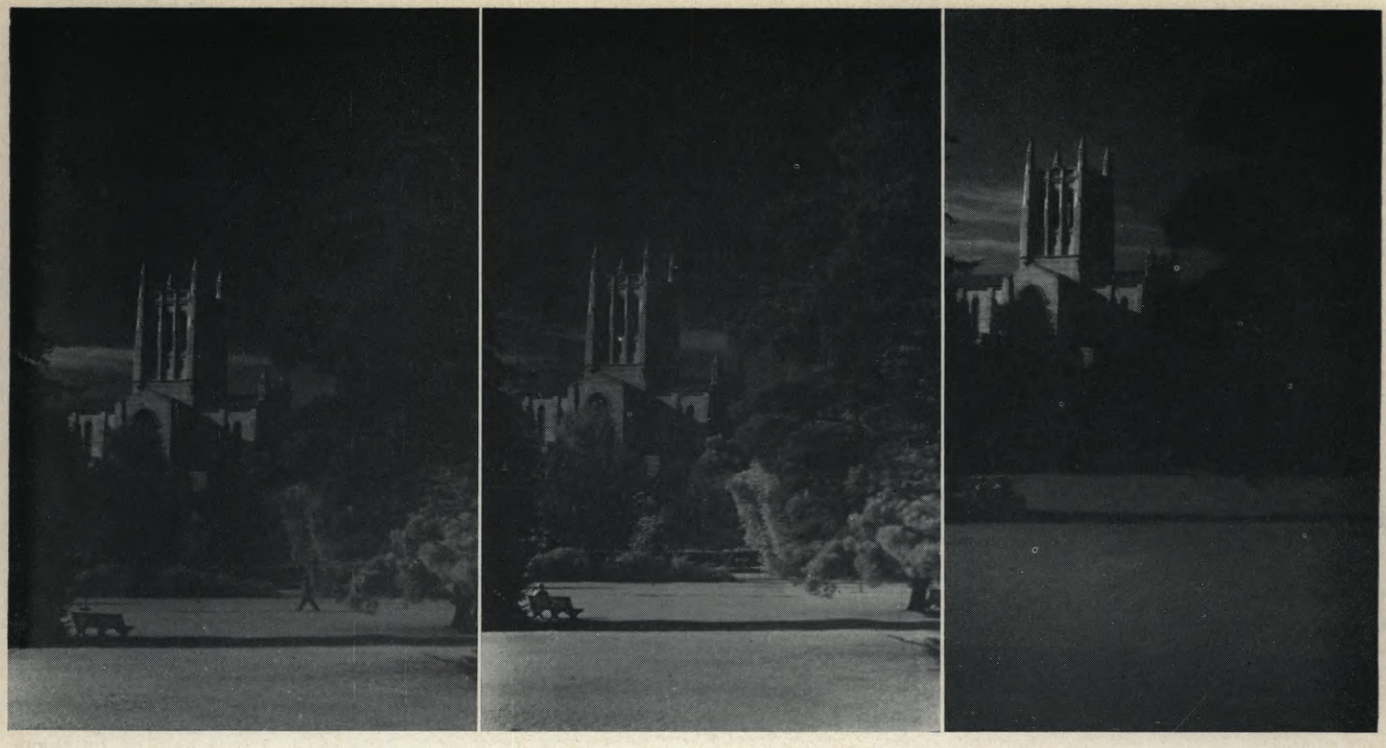

MAKING MODERN NIGHT-EFFECTS

By W. WALLACE KELLEY, A.S.C.

WHEN the first infra-red sensitive films for motion picture night-effect scenes were introduced some years ago, but one firm manufactured a sensitive material of this type. Since then, each of America's three major film manufacturers has developed an infra-red sensitive emulsion: each of the three has at different times held the center of the stage with a commanding product. But as we swing into 1941, cinematographers find themselves in a curiously advantageous position in this direction, for each of these three competing film firms offers an excellent, modernized infra-red product, and each has characteristics which adapt it to specific types of work. The cinematographer therefore has a remarkably wide range of film products to choose from when he films night-effects by day.

Modern infra-red films are better appreciated when it is understood what remarkable achievements in film sensitization they represent. The earliest types of infra-red sensitive emulsions were basically panchromatic films the sensitivity of which had been pushed up through and beyond the visible red into the invisible infra-red. For that reason it was necessary to employ extremely heavy filters like the 72, 80 and 88, which cut out virtually all the visible rays and allowed only the infra-red to penetrate. This, even with what were then comparatively fast emulsions, necessitated considerable exposures—usually a matter of maximum lens and shutter aperture.

The first of the modern infra-red types was the Agfa Infra-Red negative, which appeared early in 1937. This film was basically different in its sensitivity. It was not a basically panchromatic emulsion: instead of being sensitized to the whole spectrum, it was sensitive only to the extreme ends—the blue and ultra-violet at one end, as any emulsion based on the light-sensitive silver salts must be, and the extreme red and infra-red at the other. Therefore all that was necessary to obtain the desired infra-red correction was to use a filter which eliminated the blue and ultra-violet rays. Almost any red filter will do this, though in practice the 29-F is most commonly used. All modern infra-red emulsions are now of this type, though with varying characteristics of speed, sensitivity and contrast.

Modern Infra-Red Night-effects. Left, Agfa Infra-Red, f:5.6; Center, Eastman Pan-K, f:16; Right, DuPont Infra-D, f:8, all exposed 1/25th second. Photos by Wm. Stull, A.S.C.

The Agfa product, now modified as Agfa Infra-Red, Type B, retains the same basic characteristics which made its original predecessor famous. It gives the desired infra-red night-effect correction with only a moderately red filter. It requires only a moderate alteration in facial make-up—chiefly the use of a blue-red lip-rouge—for night-effect scenes involving people. It has perhaps the softest contrast characteristic of any of the present infra-red products.

The DuPont product, introduced in 1940 and known as "Infra-D," is a direct descendant of this firm's original infra-red negative introduced some years ago under the same name. But the modern-day Infra-D is a very different product from its forebear. It is vastly faster, and sensitized so that only moderate filtering is necessary. Finally, it embodies a distinct advance in infra-red sensitization in that for the first time an infra-red emulsion is available which does not render the green chlorophyll of plant-leaves a snowy white, but instead gives a normal, dark rendition of foliage.

The Eastman product, likewise a new-

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16mm. Goes Professional

By WILLIAM STULL, A.S.C.

HOLLYWOOD'S major studios are putting 16mm. to work as a seriously professional aid to feature production which it is anticipated will save the industry hundreds of thousands of dollars every year. In at least three of the industry's largest studios, the use of 16mm. has within recent months become a routine, almost commonplace occurrence; in others, this newest development is being carefully watched.

One of the most necessary, yet at the same time most troublesome of the pre-production preparations for making a modern feature film is the matter of making tests, especially for Technicolor productions. Fabrics, pigments, costumes —sometimes even complete sets—must be screen-tested to determine their suitability. Actors and make-ups have to be test-filmed to make sure they will fit their roles. Locations have to be scouted, and test-shots put on film to be brought home to screen for director and executives. Thousands of feet of film often have to be exposed on these various tests before ever an inch is shot on the actual production. All of this costs money, especially when the tests are made in Technicolor, at an average expense for film alone of 33 cents a foot, to say nothing of the rental of the expensive Technicolor camera and the time and effort consumed in getting nearly 600 pounds of camera into action for a few feet of film.

So today 16mm. is to an increasing extent taking on these pre-production duties at vastly less cost in time, effort and money, and with little if any sacrifice in technical accuracy.

Amateur Cameras Used

In most instances so far, ordinary home movie cameras are being used; in some instances, Magazine Cine-Kodaks; in others, 70D-A Filmos. They are manned by full professional crews, and handled in every way like the 35mm. studio cameras they are supplementing. One studio has even adapted an erstwhile 35mm. dolly to permit dollying the little 16mm. cinebox!

At present the chief use of these substandard cameras is for making wardrobe and similar tests, and in scouting locations, especially for Technicolor productions, where naturally the margin of saving is greatest. Admittedly, Kodachrome and Technicolor do not as yet give absolutely identical reproductions of fine gradations of color: but for these eminently practical purposes, the results are so closely similar that the results are quite comparable. Presumably, too, as cinematographers gain greater familiarity with the use of Kodachrome under studio conditions, and especially when and if Technicolor changes over to its long-rumored single-film Kodachrome-type process, the results should reach almost perfect parity. Already, the range of color-control in Technicolor printing is such that in some instances Technicolor production "takes" are understood to have been corrected in printing to correspond more closely with the Kodachrome test-shots.

Use "Type A" Kodachrome

For the wardrobe and costume tests which make up a heavy percentage of these tests, "Type A" Kodachrome film is used. The director of photography making the test lights in his normal manner, making only the necessary compensation for the film's emulsion-speed, which differs somewhat from that of Technicolor.

The professional, photoflood-type "CP" (color photography) globes are used in the lighting units. These burn at approximately the same color-temperature as the amateur's familiar photofloods, for which the "Type A" emulsion is balanced. The results on the screen are closely comparable to those obtained with Technicolor film and the usual arcs—and obtained with much less trouble. For exterior tests—location scouting, and the like—the regular "daylight" Kodachrome film is of course used.

Projection methods and equipment vary. In some studios, the familiar Bell & Howell and Eastman home projectors are used as highly portable units, making it possible to show the tests to a director or executive in any convenient projection-room, in a private office, or even in some cases in the executive's home. In others, the trend is toward a more fixed installation, with Filmoarc projection units which, though mounted on a wheeled stand and therefore technically in the semi-portable class, it is planned ultimately to use as fixed units in a projection-room dedicated principally or exclusively to large-screen 16mm. projection.

20th-Fox Pioneer

One of the first, if not actually the first of the major studios to put 16mm. to use for testing was 20th Century-Fox. There Supervisor of Photography Daniel B. Clark, A.S.C., a long-time 16mm. enthusiast himself, has pioneered the use of 16mm. color tests for nearly two years. Speaking of his studio's use of 16mm., he says, "For the purposes for which we have used 16mm., we have found the smaller film eminently satisfactory, and a great saver of time, money and trouble.

"As a matter of fact, modern 16mm. equipment and emulsions have reached a point where there is absolutely no reason why they should not be satisfactory for this sort of use. That is, as long as they are intelligently handled, and by trained photographic personnel. In the hands of non-photographers, or of photographers who consider because 16mm. is widely used for amateur movies, it is a plaything and need not be taken seriously, it can and does of course give inferior results.

"But we handle our 16mm. tests with full studio crews, who give it the same expert handling that would be accorded 35mm. Accordingly, we get professional results. For example, in our interior tests, we balance our lighting fully as carefully for the 16mm. Kodachrome as for 35mm. Technicolor. As has several times been pointed out in articles in THE AMERICAN CINEMATOGRAPHER, we at 20th Century-Fox have found it most efficient to adhere to rigid standards of key-light intensity.

"When the problem of Kodachrome lighting first came up, experiments were made until we determined the correct key-light level—as measured by the G-E meters with which the studio supplies all its directors of photography—to give us the desired results in Kodachrome. From this correct starting-point, the director of photography making the test can thereafter light the shot as he sees fit."

9,000 Feet Shot

During the period this studio has been using 16mm. Kodachrome for testing, they have (up to December 15th, 1940) exposed about 9,000 feet of Kodachrome. Since one foot of 16mm. is equivalent in screen time to 2½ feet of 35mm., and since the 16mm. tests are usually shot at the 16-frame-per-second silent-picture speed, while 35mm. tests are made at 24-frame sound speed, this footage is equivalent to some 33,750 feet of 35mm. Technicolor. The saving in film-cost alone is considerable when you figure Technicolor at an average of 33 cents per foot, and 16mm. Kodachrome at around 8 cents per foot. When the differential in screen-time and footage is taken into consideration it works out to a matter of reducing the cost of color tests from 33 cents a foot to the equivalent of slightly over 3 cents a foot! No wonder some experts (not Clark)

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Filming a scene in Brazil's Cinedia Studio. Note native-made blimp on Mitchell Camera. Photo by William B. Larsen.

SOUTH AMERICA MAKES MOVIES

By CARL FREDRIK NELSON,

Director-Cinematographer,
Producing Director of
films in Argentina and Chile.

TWO and a half years in South America, and an intensive study of the film industries there, should enable a fairly authoritative report of film production matters.

Having accepted an assignment as "Director Tecnico" to set up the equipment and organize the production staff for a new Argentine producer, I sailed for the land of the Gauchos in the early part of 1938. The leisurely itinerary of the ship enabled an opportunity to study something of the film industry in Brazil. Then on to Argentina where I found my erstwhile employer to be among the missing. However, I soon obtained a very attractive position as production supervisor on two feature-length films. Having completed these, I left for home, by the way of the Pacific coast. Stopping in Santiago, an offer to produce and direct films in Chile, was made to me. After I had produced six films, my homeward journey was continued, and concluded.

Stopping off in Brazil, I found that no feature films were being produced at the time. Only the "compulsory" shorts were being made. Under Brazilian Law, each theater must show a minimum footage of native product. During the projection of these films, the audiences regard it appropriate time for intermission, going to the lobby for a smoke. I was interested in seeing what these native films were. It appears that the usual practice of the native producer, of which there are about twenty, is to set up his camera in the middle of any street, and just crank away the required footage, come what may in front of his lens. He knows that he will sell it, or rather that the theatres must buy his film. Of these is the greater part of the Brazilian film in-

Scene from the historical production "Amalia," photographed by John Alton, A.S.C., for Argentina Sono-Film Studios, Buenos Aires.

dustry. However, there are a few honest and conscientious producers who are trying to produce better films for their country.

Much credit is due them for fighting a hard battle against the lackadaisical attitude of the others. I was told that there is a studio in Sao Paulo, but it was closed while I was there. Not much chance in Brazil, so on to Argentina.

Argentina has about ten or twelve legitimate film producers, and a host of "Penny Ante" artists who make a lot of noise about the great films they are going to produce. After they have sold a few shares of stock, they quietly disappear. Yes, South American countries as well as Hollywood, have their share of promoters and grafters!

In and around Buenos Aires, there are about nine honest to goodness studio units, where films can be produced with not too many difficulties. One of the more important is Lumiton with three stages, their own built sound-recording equipment, including the microphones and the light modulator. They have also built their own laboratory developing machines, and do all their own work on the films from start to finish. They also have background-projection equipment.

Sonofilm also has three stages, with RCA equipment. They send the film to a service laboratory for processing. For several years John Alton, A.S.C., was Sonofilm's chief cinematographer.

Pampa Films has two stages, with native-built sound equipment using an Eric Berndt galvanometer. They also send the film out for processing. Bob Roberts, who did trick work in Hollywood some years ago, does some of the camera work for Pampa.

S.I.D.E. has two stages. The owner of these studios, Alfredo Marua, was formerly in the phonograph-record business, so found it a very short jump to the sound picture business. A capable technician, he built the sound equipment, also using an Eric Berndt Galvanometer. They have their own laboratory. There are also a number of single-stage units, of which I may be safe to say that Estudios San Miguel is about the best-equipped studio in South America. For sound recording, they have one of the latest RCA studio units equipped for PP recording. The laboratory has one of Art Reeves' developing machines, an Eastman IIb sensitometer and all other equipment necessary for strict control.

When I was there, Reggie Lamb, formerly of Consolidated, was Lord High Commissioner there. His lab building is completely air-conditioned. The studio has its own electric generating plant powered by several Diesels. The complete Mole-Richardson lighting equipment is fed with 110 volts DC. All other studios use the 220 volt 50 cycle current from the public utility lines.

The local Mitchell representative, Carl Seidel, has a Mitchell sound-recording unit, mounted in a four-wheel-drive truck, together with his Mitchell NC camera equipment, for rent. There are other single stage units with native-built sound equipment. Most of these sound equipments use the aforementioned Berndt galvanometer.

The French DeBrie Super-parvo dominates the camera equipments; there are sixteen or seventeen DeBrie units. There are three Mitchell units, and two Hollywood-manufactured abortions that had better remain anonymous.

There are also a few Bell & Howells, some 400-foot DeBries, and a scattering of Eyemo cameras that get some occasional use. Since my departure from Buenos Aires, I hear that another studio, consisting of several stages, has been completed. At this writing I am unable to say what facilities and equipment they may have. Their plans, if they were carried out, should make this one of the better equipped studios.

Of the four service laboratories, the "Laboratorios ALEX" is the largest. With their battery of ten DeBrie developing machines and Bell & Howell continuous printers, they do most of the processing in Argentina. About a year ago, they installed one of the DeBrie Super-Super-Super trick process printers. Just press a combination of buttons, and the completed film rolls out at the other end—almost!

Some cartoon work is done by Christiani, who has also installed a small laboratory. I should say that he has renovated his laboratory with some up-to-date equipment, for he has done laboratory work for many years, specializing in superimposed title work on foreign language films.

At the time I was there, the German Agfa film was used to practically the exclusion of all other materials. We were about the only studio using American Kodak stock, as long as it lasted. Due to trade difficulties between the United States and Argentina, importation of United States materials was unofficially restricted, so we were forced to use the German Agfa until the Kodak representative succeeded in importing some English Kodak negative stock, which we found to be just as good.

At the start of the war, the Agfa agent took inventory and found sufficient stock for a year of normal demand. How it is now, I cannot say.

The administrative organization, or rather lack of organization, is worth some mention. Production is done under the European system, where the director is king. He has the first and last word. Everyone awaits his decision. A scene is made when he decides to make it. A set is built when he orders it built, and not before.

Most of the directors, writers and actors are active on the stage of Argentina, or their earlier training was in the theater. Therefore the films show the stage technique. An abundance of dialogue with very little movement.

An Argentine director with originality is a rarity. Copying is the average director's greatest accomplishment; he is usually an avid subscriber to every fan and trade publication from all over

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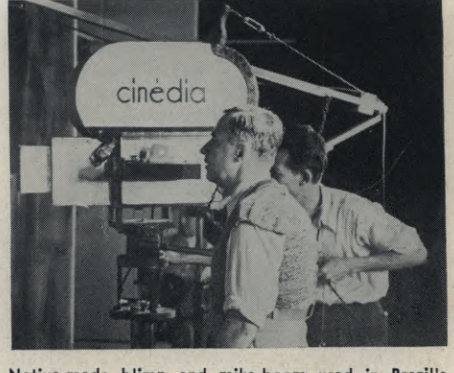

Native-made blimp and mike-boom used in Brazil's Cinedia Studio. Photo by Wm. B. Larsen.

CAMERA DEPARTMENT GLIMPSES

1: Warner Bros. Studio

THE manifold activities of a major studio's photographic department are as bewilderingly kaleidoscopic as a modernistic photomontage. Sensing this, montage-expert Charles Woodley of Warner Bros.' still laboratory assembled the multi-composite photo reproduced above. It shows some of the activities and personalities of the photographic department of Warner Bros.' Studio, where the genial E. B. (Mike) McGreal is head of the combined camera and still departments.

While space unfortunately does not permit complete identification of all the personalities and scenes included, we'll start the game of "what can you see in this picture" by naming a few of the more prominent ones. At the upper left, smiling, is camera-chief McGreal. Directly below him is Director of Photography Charles Rosher, A.S.C., with L. William O'Connell, A.S.C., below him to the left. Slightly to McGreal's right, contentedly puffing his inevitable pipe, is Tony Gaudio, A.S.C.

At top center is James Wong Howe, A.S.C., surrounded by his crew, with Sol Polito, A.S.C., and his staff directly below. In the lower right-hand corner, Sid Hickox, A.S.C., sits in front of his camera watching a scene. In the extreme corner Arthur Todd, A.S.C., and Ted McCord, A.S.C., compare exposure meters. In the lower left-hand corner, Ernest Haller, A.S.C., can be found sitting at the right of his camera.

Other notable photographic personalities shown in the picture include the many outstanding Warner production and portrait still photographers, and the many unsung men and women who keep the cameras running and develop, print and enlarge the stills. Glimpsed in some of the long-shots are pictorial peeps into the camera and dolly storage rooms, 35mm. loading-room, test-darkroom, etc., and the various still laboratories in which stills are developed, printed and enlarged, the special miniature camera laboratory, the clerical offices, etc. We hope this will be the first of a series of glimpses of major-studio camera department activities.

THROUGH the EDITOR'S FINDER

NEARLY twenty years ago, a hard-boiled newsreel cameraman in a middle-western city took a hopeful young 35mm. cine-amateur under his wing, and began the thankless task of licking the raw young cub into a cameraman. Among other pieces of well-remembered advice was this: "Son," he said, "out in Hollywood the studio cameramen publish a magazine called THE AMERICAN CINEMATOGRAPHER. If you want the real facts on how to make movies, read it. It's the goods!"

Today that same youngster, now older, and himself a member of the A.S.C., takes office as Editor of THE AMERICAN CINEMATOGRAPHER. Starting out in his new post, those words of his cinematographic teacher come again to mind. Realizing how much dependable movie-making information meant to him in his early years, and how much it has meant to others—professional, semi-professional and amateur—with whom he has talked or corresponded during his eleven years of active association with this magazine, he starts his new work as Editor with a pledge that today, more than ever before, THE AMERICAN CINEMATOGRAPHER will be dedicated to bringing the **facts** of movie-making to its readers throughout the world. Published as it is in the center of the world's movie-making, sponsored as it is by the American Society of Cinematographers, rightly termed "the camera-masters of the world," this magazine is in a unique position for serving movie-makers—professional, semi-professional and amateur alike—by bringing them the latest and most authoritative **facts** on making movies. To that end it was founded. To that aim, it has for twenty years adhered. To that ideal its future policy is dedicated.

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AS the time for the Academy Awards comes near again, we can't help remembering a note written us by Academy Secretary Don Gledhill last spring, in which he commented that, thanks in some small part to an Editorial written in another publication by this writer, the Awards Committee had gone on record as recommending that a regular Award (as differentiated from the previous "special" Awards, which could be bestowed or withheld at the Committee's pleasure) be established for special-effects cinematography. This, he stated, was the first official step in procedure which would automatically result in the creation of such an Award for the following season. That season is now here—and we hope the Committee's recommendation has been put into action by the Academy's governing body.

For today such an Award is definitely needed. To an increasingly great extent modern productions owe much of their dramatic and economic success to the skill of the special-effects cinematographers. Almost every production that comes out of Hollywood's major studios embodies some proportion of process-shots. Some owe their economic practicability to this process, which successfully brings to the screen scenes which if filmed by conventional methods would have been too dangerous, too difficult or too costly to be filmed on any commercial basis.

In at least one recent release a noteworthy outdoor epic was filmed—thanks to the unsung efforts of the various photographic process specialists—without making it necessary for the troupe to travel farther from the studio than the back-lot ranch. The Director of Photography on that picture has, in fact, remarked to the writer that that production could not have been filmed on the budget and schedule available for it without the efforts of the special-effects staff. As it is, that production is a money-maker. Without the special-effects department's economies, the production—if filmed at all—would have been so costly it could not hope to show a profit under today's economic conditions. Add to this the fact that the special-effects shots are eminently convincing on the screen, and you reach the conclusion that the special-effects men have a really worthwhile achievement to their credit.

But if the Academy makes such an Award, we hope that they will bestow it, not for an achievement in obvious "trick" photography—though there have been several highly meritorious achievements of this nature during 1940—but for the less spectacular achievements which give modern process work its real value. Admittedly it takes great skill to turn out a "trick" production. But it seems to us that it takes even greater skill to turn out process-shots that blend in perfectly with conventional scenes—that don't seem at all out of the ordinary to the lay viewer when screened. And it's those shots that really pay off: they are the ones that enable the rest of us to make pictures which could not be made profitably otherwise. They're the shots that help make money for our studios—and in doing so, make jobs for scores of other men and women who mightn't be working otherwise. Aren't those the kind of process-shots that really deserve the Award?

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JUDGING by some of the pictures we've seen previewed lately, a new and welcome trend in cinematography is making itself felt. For many years, as panchromatic film grew faster and faster, the results on the screen have grown softer and flatter. At the start, this was undoubtedly a desirable thing, for we all remember how unpleasantly contrasty the pioneer pan emulsions were, and how cinematographers and laboratory men alike fought its excessive contrast. But it was carried too far. In too many instances, our screens became ultra-soft masses of indeterminate grays, with neither clean highlights nor full-bodied shadows. We were using only a restricted portion of the full gradational scale.

But during the past few months, several cinematographers have been making a definite change in their photographic methods. They have been lighting for a more normal contrast—a more complete gradational scale. The result on the screen is eminently pleasing. With a wider gradational range with which to work, these men have obtained richer and more normal visual effects. They have had a more abundant tonal range with which to paint their pictures. They have obtained, too, an illusion of increased definition, and enhanced realism. After viewing a few productions photographed in this manner, one can't help feeling a bit unsatisfied at seeing a more conventionally handled film, with its flatter, grayer tonal scale and softer definition.

Looking over the standards of modern still photography as exemplified in the better picture-magazines, we've an idea this contrastier treatment is well in step with public taste. Of course it is something which can only too easily be overdone, but done with the skill of which Hollywood's Directors of Photography are capable, it should play a worthy part in making modern audiences feel more satisfied when they go to the movies.

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THE other evening we were privileged to be present at a showing by Edward Weston, the noted still photographer, of some of the photographic studies of the West which he made for the Guggenheim Foundation. It was a memorable experience: you may not always agree with Weston in his choice of subject or treatment, but you can never deny that he stamps each print with the impact of a vigorous and unforgetable personality. You cannot deny, either, that whether or not you agree with his choice of subject, the result is always a picture in the truest sense.

During the evening, Weston made a remark that summarizes one of the basic facts of photography. "You can teach almost anyone the technique of photography," he said, "but you can't teach them the art of seeing. And if your eye can't see a picture before the exposure is made, no amount of mechanical skill can make the result a real picture."

PROPOSE STANDARD METHOD OF DETERMINING SPEED OF FILMS

By M. E. RUSSELL,

American Standards Assn.
Committee on Photographic Standardization

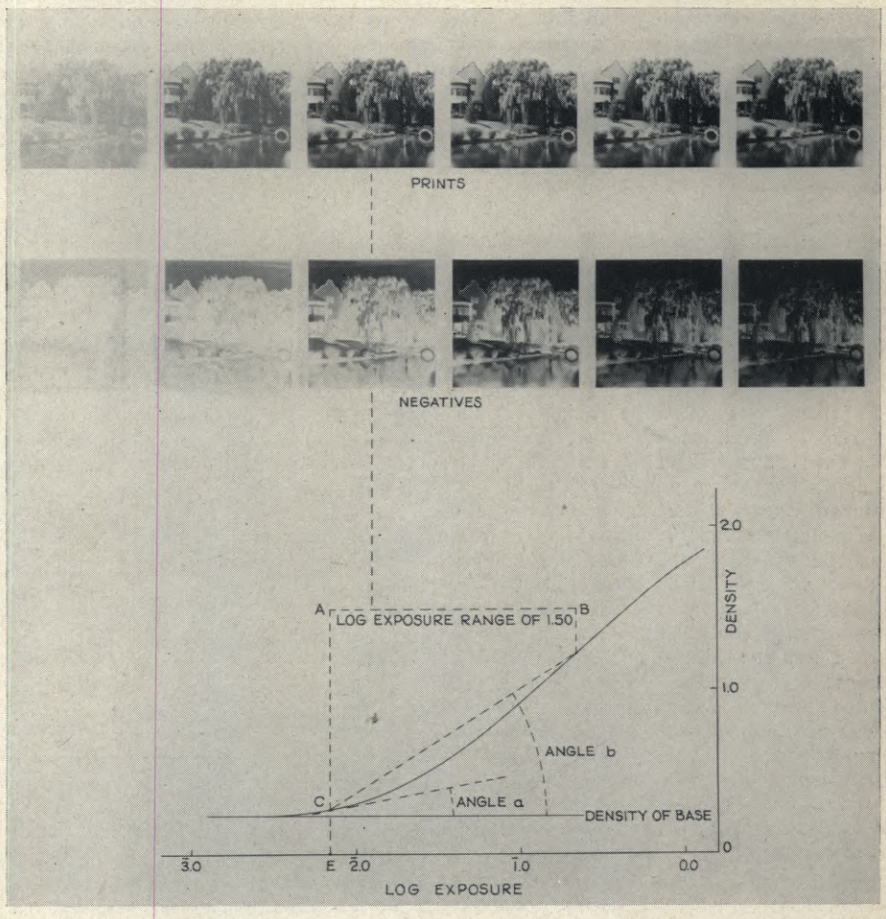

Figure I

Editor's Note: The problem of arriving at a standard system of rating the speed of photographic materials is a complex and important one. For this reason we feel that the following communication from the influential American Standards Association deserves the attention of all photographers. It should be borne in mind that the present proposal deals only with products for still photography: the application to motion picture films will undoubtedly be worked out later in cooperation with the Association's Committee on Motion Picture Standardization, of which the A.S.C. is a member.

THE American Standards Association is now publishing a proposed method for determining photographic speed of roll film, film packs, and miniature-camera films. The method was drawn up by the committee on photographic standardization (Z38). The method is being published for trial and criticism for a period of approximately one year, at the end of which time it will be considered for adoption as an American Standard. If it is finally approved as an American Standard, it is expected that it may be used as a basis for recommended exposures for picture-taking and for assigning speed numbers to films.

The proposed method for measuring speed is built about the following concept:

Photographic Speed is to be considered as inversely proportional to the minimum camera exposure which a negative material must receive in order that an excellent print may be made therefrom.

This concept implies that speed can be measured by making the best possible print from each of a series of negatives (negatives which differ only in the exposure they have received) and then deciding by observation the minimum negative exposure that will lead to an excellent print. Such a concept of photographic speed seems so simple and straightforward that one might wonder why it had not been adopted years ago. The answer is that the making of picture negatives and prints to determine speed is a very unwieldy process. Besides the many difficulties in obtaining negatives properly exposed using a certain type of subject and lighting, a very large number of prints must be made and their quality judged by a large panel of judges making a multitude of observations.

Numerous systems capable of laboratory control have been proposed for measuring speed during the history of photography and several of them have enjoyed considerable popularity. Each of these systems has been designed to give results quickly and simply and with good reproducibility. Unfortunately none of them gave results which necessarily agreed with picture-taking practice. Often the discrepancy between the calculated results and those obtained by actual picture taking was so serious that photographers used the term "practical speed" to indicate that in practice the speed would be found to differ significantly from that obtained by the laboratory method.

Since the success of any method of determining photographic speed depends upon the ability to operate it with reasonable rapidity and with a high degree of reproducibility as well as agreeing with actual picture tests, it was necessary that a laboratory method be found from which the results would be the equivalent of picture taking. Within recent years such a method has been evolved in the field of sensitometry, and it is this method which is used in the proposed standard. It has been found to give excellent correlation with picture-taking practice and at the same time to be a satisfactory method for laboratory manipulation.

The method consists of plotting a characteristic curve (that is, density vs log exposure) of the material being tested for a particular set of exposing and developing conditions and then determining

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A.S.C. on Parade

Dewey Wrigley, A.S.C., draws the most unusual camera-assignment to date. It appears a tropical hurricane figures prominently in Cecil De Mille's forthcoming "Reap The Wild Wind"—and **Dewey** has been elected to reap it. He has volunteered to take a Technicolor outfit to the Bahamas during the coming spring equinox, when that part of the world harvests its best hurricane crop, and film one in color as it goes by. He'll be protected by a concrete pillbox firmly anchored in the shallows near Nassau. According to trade-paper reports, the studio plans to recognize his heroism with the highest single day's pay-check yet doled out to a cinematographer—$1000 *if* he gets the shot! Here's luck, **Dewey!**

•

L. William O'Connell, A.S.C., drew December's whackiest assignment. His boss, Producer Jack Warner, is a well-known horse-fancier, and it appears that one of the Warner stables' prize mares was anticipating a blessed event. So **Connie** and his crew camped out for four days at the ranch, to be on hand to record the arrival of the new champion on film. Yes, he did it. Maybe we ought to call him **Dr. O'Connell, D.V.S.,** now!

•

After seventeen years at one studio, **Victor Milner, A.S.C.,** is leaving Paramount January first to freelance. With an Academy "Oscar" and credits for an imposing number of Paramount's top photographic jobs to his credit, **Vic** ought to be in demand among producers who want their pictures brought to the screen with the inimitable **Milner** quality. But it won't seem quite natural to us to visit the camera table at the Paramount commissary and not find **Vic** in his usual place.

•

Ray June, A.S.C., draws the assignment for directing the photography of MGM's "Ziegfeld Girl."

•

Eddie Linden, A.S.C., takes time off from his hobby of oil painting (he's good at it, too!) to photograph Monogram's "Gun Smoke Valley."

•

William Skall, A.S.C., had charge of the advance-guard which went to Flagstaff, Ariz., early in December to Technicolor MGM's "Billy the Kid." He was soon joined by his Co-Director of Photography, **Len Smith, A.S.C.**

•

Flu victims during last month's epidemic included **Joseph Valentine, A.S.C., Leo Tover, A.S.C., Tony Gaudio, A.S.C.,** and **Victor Milner, A.S.C.** Pinch-hitting for **Tover** on Paramount's "I Wanted Wings" was **Dewey Wrigley, A.S.C.;** **Ernie Haller, A.S.C.,** took over Warners' "The Great Lie" for **Gaudio** and **Theodor Sparkuhl, AS.C.,** performed a similar office on "Lady Eve" while **Milner** battled the flu bugs.

•

A.S.C. Associate Member **Ted Curtis,** Vice President in charge of Eastman's motion picture film sales, is on a year's leave from his desk in Rochester. As **Major Curtis** he'll be attached to the office of the Chief of the U. S. Army Air Corps as a special adviser. During the last war, **Ted** was one of America's few honest-to-goodness air aces. No wonder Uncle Sam wanted him back!

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John F. Seitz, A.S.C., and Ralph Hammeras are co-producers in a new firm making "soundies" for the 16mm. eye-and-ear juke-boxes.

•

Sid Wagner, A.S.C., goes a-Technicoloring with the assignment to handle special sequences of MGM's "Billy The Kid."

•

The sympathies of the A.S.C., are extended to **Sol Polito, A.S.C.,** on the loss of his mother, who died December third, at the age of 80.

•

Jackson J. Rose, A.S.C., received the camera assignment on MGM's short, "Immigration."

•

Oliver Marsh, A.S.C., has been assigned to direct the photography of MGM's "Rage In Heaven." There may be rage in Heaven—but not in the projection-room where the femme stars of the film will go into raves over **Ollie's** photographic treatment of them!

•

Milton Krasner, A.S.C., is busy at work lensing Universal's contribution to the draft cycle, "Buck Privates." As one of the younger generation of cinematographers, wonder if **Milt** is near enough the dangerous age so the assignment might be classed as preparation—?

•

The trade-papers claim Howard Hughes' production "The Outlaw" lacks name-appeal. We'll bet the camera-minded public won't agree with that when they learn **Gregg Toland, A.S.C.,** has been signed as Director of Photography!

•

Indicative of the importance the MGM biggies attach to their forthcoming "Dr. Jekyll and Mr. Hyde," they've announced that **Karl Freund, A.S.C.** and **Paul Vogel, A.S.C.,** have been assigned to work with make-up chief Jack Dawn on an extensive series of make-up tests. We assume they're trying to find "Mr. Hyde," who is presumably hiding somewhere in the make-up department.

•

Still taking bows for his magnificent job on "The Letter," **Tony Gaudio, A.S.C.,** has been assigned by Warner Brothers to do the same for "Winged Victory."

•

Lester White, A.S.C., presides over the cameras filming MGM's "Andy Hardy's Private Secretary."

•

Bert Glennon, A.S.C., draws the assignment of directing the photography of Paramount's "One Night In Lisbon." Incidentally, just before Christmas **Bert** and the younger Glennon were seen having a perfectly grand time in the toy department of one of Hollywood's department stores. Wonder if Santa brought **Bert** that electric train he was admiring?

•

Robert Planck, A.S.C., has been assigned to have photographic charge of "A Woman's Face" for MGM. Judged by past performances, **Bob** is a cinch to make it look swell.

•

Ernest Haller, A.S.C., after pinch-hitting for half of Warners' flu victims, gets the nod to direct the photography of "Miss Wheelwright Discovers America."

•

George Folsey, A.S.C., has been assigned as Director of Photography on MGM's 1941 remake of "The Trial of Mary Dugan." It was previously made as one of the pioneer talkies in 1929. At that time, **William Daniels, A.S.C.,** was in charge of the cameras.

•

William Daniels, A.S.C., did so well when he moved his cameras across Cahuenga Pass to film "Flotsam" for Loew-Lewin at Universal that he's been retained for a second Universal production, "Back Street." And the way his fellow-workers talk about him and his work is a grand tribute to **Bill.**

•

Did you see that recent issue of "Time," with its write-up of the camera profession? It's worth reading, and gives a swell break to the A.S.C. and several of its members. **Joe Valentine, A.S.C.,** says several people have accused him of engineering it, but insists it ain't so. "If I had," protests **Joe,** "would I have put in that crack about my moustache?" And speaking of national publicity, how about the twin breaks **John W. Boyle, A.S.C.,** drew in "Life" and "National Geographic" with his stills from the Thaw Trans-Asian trek?

•

W. Wallace Kelley, A.S.C., is busy knocking wood these days. **Wally** is one of the few who escaped the flu.

•

John Alton, A.S.C., has just finished another "Dr. Christian" opus for RKO. Looking back at **John's** record with this series, we'll bet **John** doesn't eat apples!

PHOTOGRAPHY OF THE MONTH

CHAD HANNA

20th Century-Fox Production. (Technicolor)
Directors of Photography: **Ernest Palmer, A.S.C., and Ray Rennahan, A.S.C.**

Anyone who still believes that color should be lighted flatter and with less imagination than black-and-white should make it a point to view "Chad Hanna," and see what two masters of the camera can do when they set out to film in Technicolor a script demanding a lot of effect-lightings. To put it simply, the greater part of this film's footage necessarily had to involve effect-lightings—interior and exterior. They are handled with all the freedom, imagination and artistic feeling that would be expected in a monochrome production. The fact of color never appears to have exerted any restraining influence, but instead adds definitely to the dramatic and pictorial value of the camerawork.

As a matter of fact, some of these effects seem to have been both lit and printed to a higher contrast than would be the case in monochrome. Far from being objectionable, this higher contrast seems definitely to add to the realism of the scenes. In some of the earlier exterior night-effects, it must be admitted, the moonlight seemed perhaps a trifle too aggressively blue; but in the later night exteriors, this was not the case. In general—indoors and out—the use of deep, full-bodied shadows as forceful elements of the composition was worth a million of the gutless semi-shadows with which color scenes are so often afflicted.

The forceful modelling of players and sets was noteworthy. So, too, were some of the severely simple, strongly key-lit shots of Dorothy Lamour, while in a more conventional manner, the diagonally composed close-up of Linda Darnell in bed was one which should certainly have earned the cinematographers that young lady's unending gratitude. In general, the flesh tones were excellent, with the unfortunate exception of some of Henry Fonda's earlier scenes, in which he appeared rather too pasty-faced to fit his character. A darker make-up would undeniably have helped; probably it did, for this flaw disappeared in later sequences, and his visual characterization became increasingly robust.

In addition to the more obvious effect-lighted sequences, the co-directors of photography are to be warmly congratulated on their handling of such other scenes as the day effects under the circus-tent—with a "hot" exterior background furnishing a distinctly tricky light-balancing problem—the many process-shots atop the circus wagons, and the various day and night scenes of the circus performances. For these, Operative Cinematographer Don Anderson deserves an orchid for executing, even though handicapped by the bulky Technicolor equipment, follow-shots of such quality as to draw praise even from laymen in the preview audience.

SANTA FE TRAIL

Warner Bros.-First National Production.
Director of Photography: **Sol Polito, A.S.C.**
Directors of Special-Effects Photography: **Byron Haskin, A.S.C., and Hans Koenekamp, A.S.C.**

Director of Photography Sol Polito, A.S.C., has invested "Santa Fe Trail" with a mounting of crisp, black-and-white camerawork which is eminently satisfying. The print previewed seemed a distinct departure for Fred Gage, A.S.C.'s excellent laboratory in that the usual softness was abandoned for an increased contrast which lent richness to Polito's crisp monochrome cinematography. The gradational scale was excellent, leaning strongly to the virile shadows which Polito used to heighten the robust dramatic effect without at any time losing either the highlights or the intermediate tones.

Polito's filtering of the many exterior sequences was notable, again tending to brilliant high-contrast results without at any time falling into the lurking pitfalls of overcorrection. The action scenes—especially the notable cavalry charge—are most capably handled. The many effect-lightings are also worthy of comment, especially those in the barn immediately following Errol Flynn's escape from hanging, and in the fire sequence that follows.

The Special-Effects staff likewise cover themselves with glory in "Santa Fe Trail." It is hard to believe that at no time during the eight weeks of this film's production did the company go farther afield than the Warner ranch and back-lot. For this, Haskin, Koenekamp and matte-shot painter Paul Detlefson deserve a world of credit. The many matte-shots in the picture are examples of unusual perfection. The excellent musical score by Max Steiner also does much to add to the dramatic atmosphere of the production, while Film-Editor George Amy's cutting of the fast-moving action scenes likewise deserves praise—and careful study.

Very little can be said about "Santa Fe Trail" on the critical side. About the only important shortcoming to this reviewer's eye was the handling of one short night exterior sequence in which the cavalry rode to the hero's rescue. In this, the pattern of the battery of sun-arcs needed to illumine a relatively large area at night lent a certain note of artificiality, making the technically-inclined viewer wonder why the sequence could not have been filmed in daylight with filters. Otherwise, however, "Santa Fe Trail" is a picture which should be on every photographer's "must see" list.

Gaudio Tops Preview Poll

Tony Gaudio, A.S.C. captured the approval of Hollywood's preview critics, winning the Award for Cinematography in the Hollywood Reporter's Preview Poll for November for his impressive photographic treatment of "The Letter." Runners-up were Oliver T. Marsh, A.S.C., and Allen Davey, A.S.C., for the Technicolor production "Bittersweet," and Joseph Walker, A.S.C., Harry Hallenberger, A.S.C., and Fayte M. Browne, A.S.C., for "Arizona."

Art Direction entered the Poll for the first time. It will be a permanent feature from now on. The first winners were Cedric Gibbons, John Detlie and Merrill Pye for the lavish sets in MGM's "Bittersweet." Runners-up were Carl Jules Weyl for "The Letter" and Lionel Banks and Robert Peterson for "Arizona."

FLIGHT COMMAND

Metro-Goldwyn-Mayer Production.
Director of Photography: **Harold Rosson, A.S.C.**
Aerial Photography: **Jack Smith, A.S.C.**
Special-Effects Photography: **Harold Marzorati, A.S.C.**

"Flight Command" is an impressive example of cinematographic versatility. Director of Photography Hal Rosson, A.S.C., for example, has in the past been responsible for more than a few films which were notable examples of delicate cinematic pictorialism—"Garden of Allah" and "The Scarlet Pimpernel" come to mind among them—but here his work takes an abruptly different turn, keyed to a mood of extreme visual virility, as suited to the robustly masculine story. Yet his camerawork is perfectly fitted to the story requirements. Airplane hangars, Navy locker-rooms, and the like are scarcely subjects for glamorizing photography, but Rosson's camera seems perfectly at home in them. In the few sequences in more conventional settings—those in the Squadron Commander's home, in a swank cafe, etc., where the story's feminine elements appear, Rosson's style changes just enough to be in key, yet without ever completely losing the undercurrent of strength the action demands.

In the latter part of the film, some of the most significant action is put over in a sequence of extreme big-head close-ups of the stars which deserve particular praise—and study—as examples of unconventional and very forceful composition.

In the aerial scenes—of which there are many—we find another example of camera versatility. The man responsible for them, Jack Smith, A.S.C., has never

(Continued on Page 32)

Is He the No. 1 Cine-Amateur?

By William Stull, A.S.C.

EVER since Dr. J. S. Watson, Jr., A.S.C., acknowledged as America's foremost amateur filmer, who made the sensational "Fall of the House of Usher" and "Lot," deserted the Simonpure ranks to produce the equally spectacular "Eyes of Science" for Bausch & Lomb and "Highlight and Shadow" for Eastman Kodak, the mythical championship of America's amateur filmers has been vacant.

This has by no means been because there were no contenders for the honor. Duncan Little, with his "Movie Parties," has certainly captured the position of the country's premiere amateur exhibitor.

And such sturdy contenders as Randolph Clardy, the first and only American two-time winner of the American Cinematographer International Amateur Movie Contest; C. J. "Little Sherlock" Carbonaro, and others that could be named until they succumbed to the lure of cash-and-carry moviemaking, were neck-and-neck for first honors.

Pressing them closely has been a field teeming with talented contenders. But it takes a rare combination of skill, prolificness and the possession of unusual physical facilities to hold top honors.

All of which is by way of introducing Mark C. Honeywell of Wabash, Ind., and Miami Beach, Fla.—a front-rank contender for the championship! Mark Honeywell makes pictures—good ones. What's more, he does it on a scale we've never before encountered.

We've heard of a few individual amateurs who have experimented with 16mm. sound-films. We have also heard of a few clubs—mostly in England—which maintained something which might be called a substandard studio.

But Mark Honeywell maintains and operates what, insofar as we can determine, is the only individually owned, strictly amateur 16mm. studio in the world!

In the Honeywell Studio 16mm. sound-films and talkies of all kinds are made: comedies, musicals, news-films and educationals. And they are made directly on 16mm., and strictly for pleasure. Five of those films are on this writer's desk as he writes this; any one of them good enough for professional release. Yet Honeywell has never attempted to commercialize on his filming!

The MCH Studio is the logical development of an industrialist's addiction to moviemaking. Many years ago Honeywell found himself incurably afflicted by the cinematic germ. Soon, it appears, he realized that no one man—especially if he was a busy executive like Honeywell—could hope to make all the pictures Honeywell saw crying to be made.

About this time, the earliest 16mm. sound outfits made their appearance, and Honeywell learned that making sound films well is a job for at least two men—one to handle the camera, the other to take charge of sound.

And since sound meant at least a two-man organization—why not make a real production unit out of it? That meant at least a sound engineer, a photographic expert to share the camera and laboratory work, and a combination script-girl and office force.

If all of these four cinemaniacs could "double in brass" enthusiastically the result should be the nucleus of a pretty comprehensive 16mm. producing organization. All three of them alternate on such details as editing film, writing scripts, dialog and narration, and similar tasks.

They make their pictures with the sort of equipment most of us merely dream about. The starting point is a Bell & Howell Filmo 70-DA. This is merely the utility camera for quick action. The bulk of the work is done with a Berndt-Maurer 16mm. professional camera, while the sound is recorded separately with a Berndt-Maurer 16mm. recorder.

Before direct 16mm. sound work became practical, the MCH organization equipped itself with a standard 35mm. Mitchell and an Eyemo. But latterly the quality of direct-recorded 16mm. sound and of 16mm. negative-positive picture have been such that virtually all the recent MCH productions have been made—sound and picture alike—directly on 16mm. film.

Professional practice is followed, however, in using "double-system" sound, in which sound and picture negatives are made on separate films, and not combined until the final editing.

Some work has been done in Kodachrome sound-films; but the difficulties of "duping" the color picture to form the final, composite sound-print have tended to keep the majority of MCH production on a monochrome basis.

For this, negative-positive, rather than reversal film is used. The productions screened for this writer were photographed on Agfa Supreme 16mm. negative film, developed in Berndt-Maurer's Precision Laboratory in New York.

It has for many years been my contention that until our 16mm. laboratories handled substandard negative in the same manner as fine-grain 35mm. minicam negative is developed, none of us would get out of 16mm. negative-positive all that either the film manufacturers or we ourselves put into it.

Honeywell's films prove this. With the exception of a few tests made some years ago by the writer, and developed in ultra fine-grain diamine-type minicam developers, they are the first examples I have seen of 16mm. negative-positive which have visually lived up to the claims made by their manufacturers.

These, quite literally, can hold their own with either reversal originals or the best reductions from 35mm. negatives. Several of them were shown at meetings of the Los Angeles Cinema Club: and on a 12-foot screen they looked, to speak conservatively, fully as good as the reversal films which rounded out the program.

As a rule the MCH group winters in Florida, and the spectacular attractions of that state provide a background for many of their films. Several, for instance, have been made under water at the unique Silver Springs resort, where so many professional pictures, including not only Grantland Rice Sportlights and other short subjects, but much of MGM's feature, "Tarzan Finds a Son," have been filmed.

As Honeywell and his associates do it, 16mm. submarine camerawork is fully as effective as its more familiar 35mm. prototype. Silver Springs is unique in the crystal clarity of its water; and enterprising residents have taken advantage of this and have provided two boats specially built for submarine photography.

These boats are by no means the ordinary glass-bottomed affairs familiar at so many seaside resorts. Instead, each has an extensible, tubular well in its bottom to house the cameraman and his equipment. The well provides sufficient room for a full-sized professional camera and its operator, with a plate-glass window through which the lens can scan the immersed action.

Since the top of the well is open to the air, ventilation is not a problem; there is no need of cumbersome diving suits or working under compressed air. The boat is moved into position, and the camera-tube extended to the right depth. Then the desired action is filmed. It's as simple as that!

But it is not only in spectacular things such as this that the Honeywell group exhibits movie-making skill. They give a professional touch to subjects of a far more routine nature, doing it in a way that makes them genuinely entertaining even to audiences who are not personally interested in the people and things shown.

For instance: Mayor John Levi of Miami Beach owns a dog—a little Boston Bull—and the dog's hobby (if a dog can have a hobby!) is tearing the husks off from cocoanuts.

Now most of us, if confronted with a subject like that, would confine our picture to a few scenes—at best not more than a 50-foot roll—of the dog actually de-husking a cocoanut.

After a screening or two we'd realize that while we had some shots of a novel action, we didn't have a real picture. So the roll would find its way to our surplus-film cupboard and oblivion.

Mark C. Honeywell. On opposite page the MCH Studio is seen at work.

But Honeywell made a production from just that idea! To be precise, they made a talking comedy a full 400 feet in length—and one packing enough entertainment value to interest any audience.

They began by making the fact incidental to story value. The first sequence plants the thought of a contest; a visitor twits a Floridian over Florida's neglect of the cocoanut. The native in defense points to the difficulty of getting the nut out of its tough, fibrous husk. To all of which the visitor replies scathingly, "That's nothing! Why I know a little *dog* that thinks nothing of tearing a cocoanut out of its husk, just for fun!"

The sequence ends on the "show me" note, as the two agree to stage a "battle of the century"—Skippy Levi vs. Kid Cocoanut!

The rest of the picture carries this idea to fruition, with all the trimmings. Timekeepers—referee—prizefight managers—ringside crowd—all are evident, beautifully burlesqued. Even radio is present in the form of an announcer—"Ted Confusing"—who carries the burden of sound track narration.

The basic action of the little dog, tearing boldly at a cocoanut almost as large as he is, is sufficiently spectacular to give this elaborate framework a good excuse for occupying the screen.

But it is the framework itself—the deft burlesquerie of the principals (especially "Kid Cocoanut's" manager) and the clever parody of a thousand actual fight films and broadcasts, that makes audiences like the picture.

When it ends, with "Kid Cocoanut" lying stark and nude on the grass, the pup croaking hoarsely into the mike, "Hello Mom, I moidered him!", and the luckless adherent of the cocoanut being forced, willy-nilly, to pay his bet and jump into the bay, one feels that the film has been all too short.

Thus it is not only Honeywell's remarkable facilities and organization that entitle him to renown, but also the quality of his films. Admittedly it is something extraordinary to have such an array of virtually professional 16mm. and 35mm. equipment, to say nothing of such professional accessories as studio-type lighting equipment, microphone-booms, camera dollies, etc., and a fully equipped laboratory for making and developing prints, titles, and the like.

But what really counts is having the cinematic skill and ingenuity evidenced by Honeywell and his cinematic confreres.

How To Use THAT CHRISTMAS CAMERA

By WILLIAM STULL, A.S.C.

EARLY Christmas morning my phone rang. At the other end of the wire was my friend Joe, who had just discovered that Santa had brought him his very first movie camera. That was simply swell: Joe had wanted a movie camera. He had devoured tons of alluring ads that told all about the fun of making your own movies, and how easy it was. He looked forward to the pleasure of having movies of his family, his vacations, and everything else.

But he was perplexed. He'd never used a movie camera in his life. And now that he had one—how the heck was he going to use it? What could I tell him about operating his camera, and about making movies?

Joe wasn't alone in his Christmas perplexity. At roughly the same time several hundred thousand other equally surprised citizens were asking themselves—and their friends—the same questions. It is in their interest that this little excursion into the fundamentals of moviemaking is carried on here.

My first advice to Joe—and to anyone else who finds himself gifted with a new camera—was to study the manufacturer's instruction book before doing anything else. It's a strange commentary on human nature that a man will pay as much as several hundred dollars for a piece of unfamiliar equipment—and then ignore the expert instructions provided to tell him how to load and unload the camera.

Those manuals are written by experts who really know about that specific camera; furthermore, they're usually backed up with pictures that show every operation in detail. Certainly they're worth a few moments' study.

Exposure and Focus

The next problem is exposure; and here again you've got help at your finger-tips. Of course, the safest guide is a good, modern exposure meter. But if you haven't one (and Santa doesn't often bring both camera and meter on the same Christmas!) you'll find two excellent guides all ready for your use.

Many 16mm. and 8mm. cameras have some form of exposure guide as a permanent part of their cases; in some, it's just under the lens; in others, on the side of the camera. In most cases, it is surprisingly accurate for the beginner. In addition, most film manufacturers pack similar guides with each roll of film.

Just remember, anyway, that those mystic numbers on the lens indicate the relative size of the light-admitting opening at each setting. The smaller the figure, the larger the opening, and the more light that passes through to affect your film. In most cases, each calibration means that the lens is set to admit twice as much light as passes at the next larger numbered setting.

Some cameras have the so-called "universal focus" lenses; others (usually the more ritzy ones) have lenses which must be focused. If you have one of these I'd suggest that at the start, at least, you ignore those focusing calibrations.

With the lenses normally used on 16mm. and 8mm. cameras, if you set the focusing scale on the 15-foot mark (which in some cameras is specially marked in red) everything in your picture will be acceptably sharp under most conditions.

Later, as you grow more accustomed to using the camera and judging distances, you can set the focus precisely for the needs of each shot, and get critically sharp pictures; but for the start, leave the lens at 15 feet—and you'll eliminate one more chance for making mistakes!

Movies Must Move

Now that you're actually ready to take pictures, remember that while for an ordinary still photograph movement is usually taboo, for movies the situation is just the opposite. Movies must move! But—don't take that too literally! It is the subject—the people or things in the picture—that must do the moving; not the camera.

Nine beginners out of ten fail to make this distinction, and wave the camera around, moving it up, down and across the scene—especially across—like a garden hose.

The results on the screen can be incredibly painful; besides, with the camera swishing from side to side that way, you can't get a very clear idea of what the picture is.

"But what," Joe asked, "if you can't get *all* the subject in without moving the camera?" Well, if you move the camera slowly enough, all right; but in most cases you'll have better pictures if you get two or more stationary shots of the various parts of the scene instead.

That brings us to another thing. The camera must always be considered as representing the eye of the audience. Therefore it should be steady, so that the picture on the screen won't be a jitterbug. According to the advertising,

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If you make travelogues — personalize them with people.

Hints On Making A CONTEST PICTURE

By A. L. GILKS, A.S.C.

THE most important single thing in making a film that will prove successful in local, national or international competition is the matter of getting the other fellow's viewpoint. When you analyze almost any picture —yours or anyone else's—which failed to place in competition, almost invariably you'll find its outstanding fault was failure to get the other fellow's viewpoint.

As a matter of polite phrasemaking, we often say that the winning films "pleased the judges"; actually, it is the literal truth, as well. The opposite is just as true — that the unsuccessful films failed because they failed to please the judges.

Too often they are obviously made to please the fellow that made them, and with no apparent thought of the unbiased stranger, who can judge only by what he sees on the screen. To be successful, a picture must take into account the other fellow's viewpoint in subject matter and presentation.

The question of choosing pleasing subject matter is too broad and too obvious to require discussion here. But presentation—which is the most universal weakness—can be corrected in many ways, some of which we can constructively discuss now.

Perhaps the first and most important point in successful presentation is avoiding repetition. When, for instance, a film deals with a trip or vacation, most of us are inclined to dally repetitiously with our "pet shots." We find an attractive scene—a waterfall, a lake, a mountain—and we reel off scene after scene of it from varying angles, with different compositions, filterings and the like.

Just to eliminate argument, let's say they're all good scenes. We ourselves like them; they compliment our photographic vanity. But is that any reason for boring the other fellow with a succession of scenes that are all monotonously alike?

Watching the judging of a recent club contest, I recall hearing an explosively audible reaction from one of the judges as he writhed under such a sequence of pet shots.

"When you've seen one waterfall, you've seen 'em all," he growled. "Why in blazes does this guy have to rub it in?" And he knocked several points off his rating of the film.

The same thing applies to sequences that had to be made under unfavorable weather conditions. If you're traveling you can't control the weather, and often you've got to shoot while you're there, or not at all. But again, why rub it in? To the other fellow, the picture will not only be just as interesting without the bad-weather shots, but will leave an impression of being a better film.

All of which gives us the cue to success: cut your film brutually. When most of us have struggled and worried over making a picture, cutting sharply is often as painful a process as amputating your own arm. It's only human to hate to see those pet shots and those interesting, if weather-marred, scenes that bring back specific memories of the trip go into the discard. Besides, it seems like an awful waste of good film.

Then, why not salvage the cut-outs, and make two pictures instead of one? The first one—made up of only the best scenes, and cut to the bone—could be for public showing and for the contest.

The other, including the extra shots which proved repetitious in the first film and the weather-marred or more intimately personal scenes that have no proper place in a film for general showing can be made as a purely personal record of the event.

It is a strange thing, but as a rule when one divides one indifferent picture this way, the result is two much better films. Sometimes the idea can be carried even farther: I recall one entry in a recent contest—a fair-to-middling three-reeler—which with more expert editing could have produced three prize-winning single reelers! The film, as it stood, was literally attempting the impossible task of blending three complete and separate films in one.

This matter of cutting applies quite as forcefully to scenario films as it does to travelogues or scenics. But two other factors are mighty important in putting over a scenario film successfully.

First of these, perhaps, is putting over your points completely. In other words, making full use of the possibilities of the scenes. This is vital, for you may have a clever basic idea—but if you don't develop it fully on the screen, the

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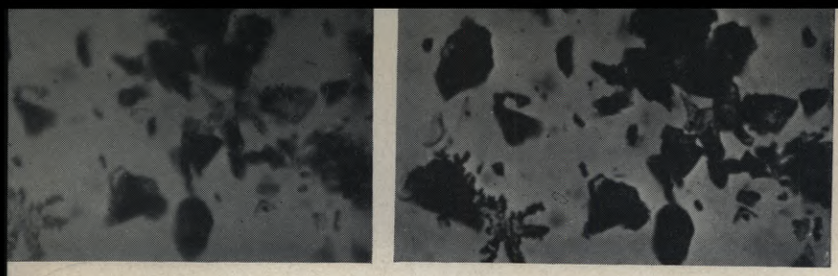


Frame enlargements of 16mm. cine - micrographs of uric acid crystals.

MAKING MICRO-MOVIES IN 16MM. KODACHROME

By PAUL R. NELSON

COUPLING a 16mm. camera with a microscope opens up a whole world of new picture possibilities, whether you're a scientifically-minded physician or microscopist, or just another movie-maker on the lookout for something new to shoot. From the pictorial viewpoint, you'll find amazing picture-material in the commonest subjects—a drop of water from a lily-pond—a fly's wing—even a snowflake; one enthusiast spent an entire lifetime making micro-photographs of snowflakes, and in all that time never found two with identical patterns.

From the scientific and educational viewpoint, micro-movies are invaluable. They preserve not only the form but the motion of micro-organisms, and make it possible to show them on the screen in enormously enlarged form to larger groups than could successfully study any other type of micro-picture.

When you couple color to this—via Kodachrome—you've added an element that will make a sensational picture out of the most commonplace subject. Not only does color "make" the picture from the layman's viewpoint: it adds immeasurably to the scientific value medical and biologic experts find in well-made micro-movies.

Making micro-movies requires precision, but it is by no means an overly difficult task for anyone with a fair understanding of either cinematography or microscopy. The first step is of course to choose a camera suitable for making pictures through a microscope. In general, almost any good, standard 35mm., 16mm., or even 8mm. camera can be used. Of these, 16mm. is by far preferable, for it combines moderate operating cost with high technical quality and the widest possible field of classroom and clinical use.

It may be necessary to make some operative changes in the camera to facilitate its use for some types of micro-cinematography, but these will seldom be of a sort that would affect the camera's use for straight photography. In some types of work a single-frame "stop motion" movement may be desirable for time-lapse and similar studies. In other types of work, large film-capacity or the ability to operate for relatively long periods without winding may be necessary.

It is vital, though, to have a camera which permits direct focusing through the picture-making aperture. The Cine-Kodak "Special" is ideal for this sort of work. Almost equally satisfactory are the various magazine-type cameras when fitted with the accessory focusing magnifiers which can be inserted in place of the regular magazine.

This feature of direct focusing makes it quick and simple to check up on focus, field coverage, illumination, etc., before each shot. Without it, one is all too often working in the dark. With it, you can be reasonably sure of results before the shot is made. The illustrations to this article were made with a Model 121 magazine-type Filmo which, when fitted with an auxiliary ground-glass focusing device, proved eminently satisfactory for the author's work.

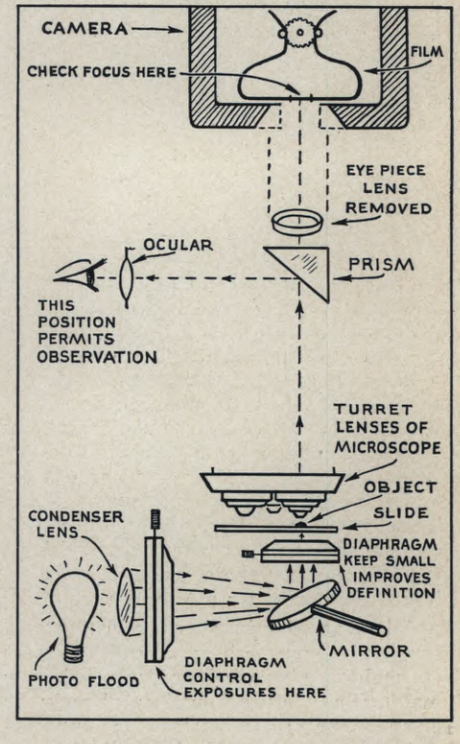
Almost any good microscope of standard design will be satisfactory for the micro- part of the micro-movie set-up. Obviously, the better the microscope, the better will be the results. In general, the Bausch & Lomb and Spencer microscopes available in most modern schools and clinics—to say nothing of those used by progressively-minded medicos—will be satisfactory.

As one ventures into this fascinating work, he is likely to be confronted with the problem of choosing between the monocular and binocular types of microscopes. The binocular type has its decided advantages, especially for those whose camera has no means of focusing directly through the photographing aperture. However, those using the more common monocular microscope can minimize this problem by using the demonstrating eyepiece with which many of these instruments are provided. This eyepiece is fitted with a beam-splitting prism arrangement such that the image may be viewed simultaneously from directly above and from one side.

In either case it will be necessary after the camera is mounted rigidly in place over the microscope to check the focus carefully, both in the camera and through the eyepiece through which the operator will watch what is being filmed. Having checked the focus at both points, the assembly should be so fixed that any focus-changes in the microscope or its ocular will automatically produce the same result in the camera. In other words, things should be set up so that what appears visually sharp through the eyepiece through which you are observing will also be critically sharp at the aperture of the camera.

Most standard microscopes are usually equipped with a three-lens turret carrying objectives of several different focal lengths or magnifying powers. This gives the microscopist a wide range of magnification—rather too wide for the novice micro-cinematographer. Beginners will find it much wiser not to try the higher-powered lenses until they are certain they can obtain passable shots using the low-powered 16mm. lens. And don't think that this will limit your efforts! Such animalculae as the rotifer, the vorticella and even the paramecium can be filmed very satisfactorily with the low-power objective. Later on you

(Continued on Page 42)



Schematic diagram of camera and microscope set-up for cine-micrography.

Forget Flat Lighting When Filming Kodachrome Indoors

By CLAUDE W. CADARETTE
Founder, L. A. 8mm. Club

Dramatic low-key lightings like this are even more effective on color than in black-and-white.

WHEN we view a professional film in Technicolor we are amazed at the effects and results which the cameramen capture in the camera lens. However, with a little thought we can analyze their beautiful work and reach a conclusion wherein we notice that we can film these same results in our own home.

Kodachrome film records all colors just as accurately as Technicolor film, with less effort. Moreover, it requires less light to film with Kodachrome. Fundamentally, then, the professional cameraman works at a greater disadvantage than we amateurs do insofar as the film element is concerned.

We also know that the professional man cannot use filters on his lens for effects, nor can we do it. Any color-filter on the lens would obviously unbalance the rendition of color in the film and give us something we do not want.

If the film elements for professional and amateur filming are the same and neither types of cameras can use filters, what then enables the professional to get beautiful interiors while the amateurs' indoor color-filming lacks the sparkle and lustre that he wanted? The secret, I believe, is in the professional cameraman's use and distribution of his light.

We have been instructed and warned many times to light our subjects and sets with a flat, even distribution of light so that all portions of the scene area have the same exposure. These instructions contend that the colors in the scene or subject create the necessary amount of contrast for separation. This is all very true and it is not incorrect to light for color filming in this manner, yet we don't see this type of lighting on the professional screen.

Such masters of lighting as Victor Milner, A.S.C., Sol Polito, A.S.C., or Ernest Haller, A.S.C., would not distribute light flatly over a set when shooting color film. This is evidenced in Milner's "Northwest Mounted Police" and Haller's "Gone with the Wind." You will notice that all interiors were made with emphasis on highlights and shadows. Although the productions were in color, these cameramen further "painted" their scenes with light just as though they were using black-and-white film stock. If all of these interior scenes had been flatly illuminated, you could film them in Kodachrome and get the same results as the large cameras.

Light, in photography, is used for two purposes. The most important use is to obtain the exposure that is desired on the film. The second purpose is to create a visual mood in the picture and to enhance its beauty.

Most of our scenarios are filmed in certain lighting keys to place the minds of our audience in a definite receptive position. If we are filming comedy, the action and story is light and carefree, so we appropriately light our sets and characters with an abundance of light to give a cheerful atmosphere on the screen. Yet this is not the proper type of lighting for dramatic scenarios wherein we must create an air of mystery or sadness. All heavy dramatic scenes should be lighted in a low key to add to the sombreness of the situation. The use of deep shadows is the best method known today, coupled with an over-all low light on the entire scene.

To light your scenes for color filming, use the same methods as you do for black-and-white film. When a scene calls for deep shadows and dramatic lighting, do not expect these results with a flat lighted area. Use your spotlights and cross-lighting effects as freely with Kodachrome as with Panchromatic films.

Scenes which are lighted for low-key effects are not necessarily scenes which are underexposed. A low key scene may have more lamps in use than if it is lighted in a higher key. In color filming, it is important to keep the subject of interest properly exposed but all other areas of the scene may fall off greatly in illumination. A person sitting by a fireplace should have sufficient light to illuminate the face but the background can be nearly devoid of light. Place only the necessary amount of light on backgrounds to bring out the detail merely for identification.

A night shot of a person ringing a front door bell can be lighted with one small spot to represent light from the porch light. This would definitely be a low-key scene and the entire effect would be lost if this scene were flooded with light. Always light for naturalness and theoretically forget the exposure problem until you have arranged your lights properly. After this is accomplished, take your reading on the subject and set the camera lens to the proper opening. When you have lighted your set for naturalness according to the mood and key desired, you will find that some areas are deeply shadowed and the other areas are more brilliant. You never walk into a room which is flat lighted and likewise your sets should be lighted in the same realistic manner. So many amateurs try to light their characters in such a manner that they are always bathed in light. The cameraman seems to fear that a shadow may fall upon the character, yet isn't it true that when you walk from one place to another, the lighting changes greatly? When your character is once established in a scene, he can remain in a deep shadow thereafter but his identity won't change. A great scene in "Gone with the Wind" was filmed entirely in silhouette when Scarlett was delivering Melanie's baby. It would not have added anything to that scene to have illuminated the faces.

It is strongly recommended that all of the lights should be strongly diffused for interior color-filming, thereby destroying sharp shadow-lines. This is particularly necessary when filming the close-ups. When the face is lighted with a three-quarters cross light with an undiffused light source, sharp shadow—lines are prevalent around the nose and eyes. With a heavily diffused light, these lines will blend and soften and remove any harshness from the face. However, the screened image will appear sharp as the camera lens captures all of the detail and sharpness of the features.

Avoid all abrupt changes in *color* from one scene to another. Color must flow as evenly on the screen as the continuity of the story. A scene predominent in red should not follow a scene which was predominant in blue. This is just as much of a shock to the eyes as an over-exposed scene followed by an under-exposed one in a black-and-white film.

Many novel effects can be filmed with the use of colored cellophane in front of

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How About Making A Family Newsreel-?

By JOHN L. HERRMANN, A.S.C.

AS 1940 and its movie-making fade into the past tense, most amateurs are likely to find themselves with a generous supply of family shots on hand, wondering what to do with them. Well, why not use them to build a newsreel of the family's doings during the year?

The raw material is there, in the form of those otherwise useless shots showing the dog getting his bath, the baby ditto, Cousin Jack and his family when they dropped in on their vacation-tour, to say nothing of all those shots you made of relatives and friends in various places whom you visited while on your own trip. All that is necessary is a little ingenuity in cutting, and the addition of the necessary titles. And you'll have gained a complete, new picture that will stand on its own merits as a picture.

There are several ways you can treat a subject like this in building your picture. The first and most obvious is of course to "play it straight"—assembling and titling the scenes in a serious, strictly literal fashion. This is probably the best if you happen to live among one of these uncomfortable families that can't stand a touch of kidding. Just cut in titles that identify the scenes as to time and place, and that tell the audience very clearly who is who on the screen.

On the other hand, if the family has a sense of humor, you can improve your picture tremendously by kidding the whole thing along. All it takes is "gag" titles, that introduce each sequence with a laugh. Heaven knows, the sort of family shots most cine-amateurs make are usually funny enough anyway—so why try to be serious about them? Take that shot of Cousin Jack's little Elmer making faces at the camera. Maybe his mother was shocked at the results on the screen, but even she could hardly help smiling at the title introducing him as "The Smith Family's Own Mickey Rooney!" Then those shots you made when high-school cousin Tommy brought home his second-hand Austin jallopy—they're good for an extra laugh if you introduce 'em with something like "Tom Senior's Buick had an affair with a motor-scooter — and Tommy brought home the unfortunate result."

Another trick of getting laughs in family pictures is in coupling them with other, actually quite different thoughts that suggest screwy associations. One amateur of my acquaintance, for example, jazzed up some otherwise commonplace shots of his youngsters at play by intercutting them with similar-appearing shots of animals in the local zoo. For example, a shot of his young daughters sun-bathing on the lawn was a "natural" to go with a strikingly similar shot of a pair of seals sunning themselves besides their pool. Another shot of Junior swimming about in a plunge made a natural pair with a zoo shot of a seal swimming in the zoo tank. Shots of the youngsters picnicking could be intercut with a close-up of an ostrich eating an orange, or even with shots of Farmer Jones' young porkers building up the bacon at the feeding-trough. And so it goes; you can "kid" almost any sort of a family shot—but be sure your associative coupling gets only a laugh, and doesn't leave a sting.

Incidentally, making up a picture like this can help a lot to make your last-summer's vacation films more interesting to the average audience. How? Well, in all too many vacation movies, the shots that really tell the story that interests the average audience—the story of your trip to Yellowstone or Hawaii or the New York Fair—are likely to be interspersed with shots of your own family and friends. These mean a lot to you, but —especially if, like most filmers, you've been too scotch with your titles to introduce each person with an identifying caption—they don't mean a thing to the average projection-victim, who has never seen those people before, and doesn't know nor care who they are.

So in building up your family newsreel, just lift these personal shots out of your vacation reel. That picture will probably be much better off without them—and you have more material to go into your news-film!

Some people have still another possible approach to personal newsreel-making. They take their cameras to all sorts of local "happenings"—and then after they've screened the results once or twice, they wonder why they wasted film on it, and what to do with the shots anyway. Making a local newsreel is the answer.

A top-flight example of this sort of newsreeling is the "Phooeytone News" that Leo Caloia, of the Los Angeles 8mm. Club, assembles. Leo takes his camera to all sorts of things. If a Presidential candidate comes to town, Leo films him. If there's a Shrine parade, his lens looks at that, too. If there's a demonstration of a new super-powered fire-engine, he shoots that. In between, he has attended and filmed most of the camera-outings of the various camera programmes broadcast by Southern California radio stations. He has shots of the Lion Farm; of the opening of the city's new Union Depot; of regattas, model airplane meets, of the Ice Follies. And does he go to town on California's perpetual bathing-girl contests! The result is a series of reels that really rival the professional news-films in variety—and (especially as regards the bathing-beauty sequences!) in displays of curvaceous camera-angles, as well! But it's a really good idea—and one that can be put into practice in almost any community.

It is only a step from this to planning and staging your own. Keep an eye on your own goings and comings during 1941, and make it a point to film scenes you can use in your own newsreel, whether it is a local or a purely family proposition. Doing this, you can often plan to stage things so they'll lend themselves to a particular style of cutting or titling better than if you just shot, and left the rest to chance. Give your people definite things to do—things which in titling your reel you can either play straight, or introduce with a "gag" title, knowing that the ensuing scenes will maintain the effect started by the title.

Finally, once you get into the swing of staging this sort of action, you can have a lot of fun building up a strictly comedy newsreel which can amuse almost any audience. Call it, say, "Smith's Unreal Newsreel"—and plan everything accordingly. Take advantage of the simple camera tricks that can be done with almost any 16mm. or 8mm. camera. For example, you can plan a sequence on Young Tommy going to school. Introduce it with a title that says in effect, "Tommy Hurries to School—" and then show Tommy going to school in *slow-motion*. Then you can top the laugh by going into the school-room some afternoon or Saturday, and staging some action of Tommy studying hard—close-ups of him behind a huge textbook which, from the front, make him look very industrious, but when the camera-angle is changed, show him "doodling," reading a detective-story magazine, or even snoozing peacefully. Then close the sequence by showing him coming home from school—shot at 8-frame speed. It's an inevitable laugh.

There are all sorts of similar comedy effects you can obtain by simple camera-trickery. For example, if you live in a wintery state, you can show Pop industriously shovelling snow from the sidewalk—and get it in reverse action, by the simple trick of shooting it with the camera upside-down. There's a real laugh in seeing a huge scoopful of snow shoot through the air to land on his uplifted shovel, and then be deposited carefully on the sidewalk!

How to Build a 16MM. SILENT VIEWER

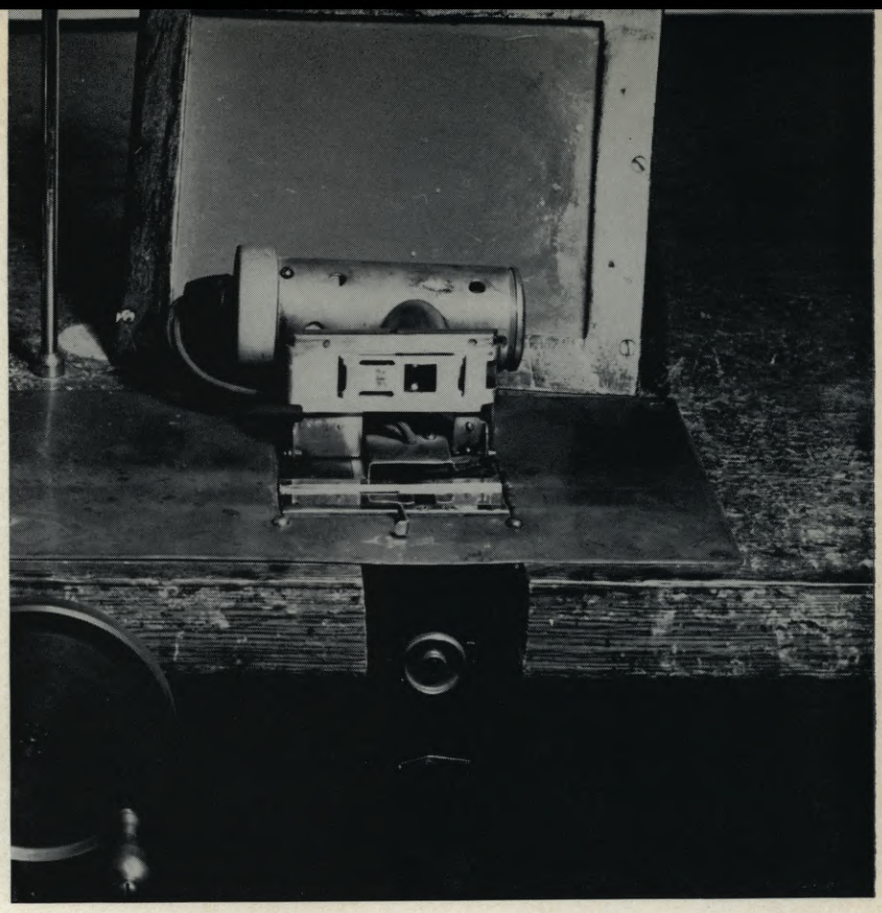
By HUBBARD HUNT,
Production Manager,
Pacific Laboratories.

SIXTEEN millimeter film, with its small image, has always presented a problem for the cutter in locating scenes. Since the acceptance of substandard photography in Industrial work, some means of viewing was needed which would simplify this problem.

Actually, two types of viewers are used by the Pacific Industrial Films but their application to a standard cutting table was not ideal. What was needed was one which would mount under the table to form a projection gate flush with the table-top.

Old-timers in the 16mm. field will remember the old Model A Kodascope projector. In its day it was the best projector on the market. The construction was very sturdy and many of these projectors, and in fact the cameras too, are used by amateurs for printers and other special 16mm. applications. Sterling Barnett, of the Pacific Laboratories, used one with excellent results for years, before the installation of a Fried Printer in the new laboratory. It was on account of these qualities that we selected the Model A for the viewer shown in the cut.

First the projecting mechanism, which included the intermittent movement, film-gate and shutter, was removed from the base. The rewind arms and lamphouse were also removed which left a compact mechanism embodying only the units necessary to feed the film.



Model A Kodascope converted into viewer.

To simplify threading, the two sprockets on either side of the gate were not used, which allows the film to come directly from the reel to the intermittent claws. By leaving sufficient slack between the two, there is no trouble in projection. After leaving the gate, the film is fed into baskets much the same as is done on standard Moviolas. It is to be remembered that this machine was designed for cutting and viewing only and is not practical for reviewing full reels. Its main purpose is to locate exact picture-frames and to identify sequences. After cutting, the film is previewed in a Bell and Howell or Craig viewer.

In mounting the movement, a section the size of the casting was cut from the cutter's table. Brackets were attached to hold the gate parallel to the table-front and flush with the table-top. A brass plate fits around the gate to form a smooth surface to protect the film and keep dirt out of the mechanism. In this position the drive-shaft extends at right angles to the cutter and as the electric motor was not used, a crank was attached. This makes it possible for the cutter to control his speed, as well as direction.

At this stage you are probably wondering what was used for illumination. The Model "A" lamphouse is pivoted to swing out of the way but, due to its size, we made a small lamphouse out of brass tubing to hold a 50-watt slide film bulb. If you can obtain one of the very earliest Model A's, you may not have to build a lamphouse, as the very first models were fitted with a low-powered, midget-size lamp and lamphouse.

The "T" shaped housing we made is pivoted on special hinges so that it can be instantly thrown back to clear the gate. A rubber bumper checks the back position and saves jarring the hot lamp filament.

Also built into the brass cover plate is a small contact switch to turn on the lamp automatically when in the closed position. The weight of the small lamphouse is sufficient to hold the gate against the film and engage the double claw movement. Should the film become fouled or in some way held, the lightweight gate bounces up with the claws, thus saving film-sprockets. Its ease of operation is a great time saver for a cutter.

Transferring the image to a rear-view ground-glass screen, mounted in front of the cutter and in back of the mechanism, was the next problem. Three front-surface mirrors bend the beam back up into a box mounting the ground-glass screen. No real problems are encountered here, outside of establishing the correct position and size of mirrors. Regular mirrors can be used if "ghost" or double image is not a handicap. A cover was made to house all the underside mirrors to keep outside light away, should cutting be done near windows. If mirrors and lenses are kept clean, the 50-watt lamp gives sufficient light on a 6x8 inch screen for both Kodachrome or black and white. The regular focusing knob is used without any alteration.

Though these old Model A projectors are beginning to become quite scarce, it is possible to pick up some in camera

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AMONG THE MOVIE CLUBS

CALLING ALL CLUB SECRETARIES!

This department of amateur movie club news is to be an important feature of THE AMERICAN CINEMATOGRAPHER from now on. We feel there is a great deal to be gained all around by making these reports of club activities available to other clubs and independent cinefilmers all over the country. But to that end, we need your cooperation. Send us the reports of your meetings—but make them accurate and prompt, getting them to us not later than the 25th of each month. Reports received later than that run the risk of going unpublished, for there is nothing colder than last month's news. Wherever possible, too, we would appreciate getting reports of meetings that *have* actually happened, rather than those that are to happen. It's very embarrassing all around to read that something is *going* to happen at such-and-such a meeting, only to find later that the meeting was called off, or somebody else elected! We also welcome pictures that show club activities.

The Editor.

DEATH STRIKES VIA RADIO. AN ACTION-SHOT FROM THE TRIANGLE CINEMA LEAGUE OF CHICAGO'S LATEST PRODUCTION, "THE WAYNE MURDER CASE." PHOTO BY LEO BROOKS.

Minneapolis Has Big "8" Show

The Minneapolis Cine Club claims a record in near-professional projection of 8mm. at the Club's Fall Show. Complete with sound accompaniment, printed tickets and all the trimmings the Club's show was presented in a theatre-size auditorium before an audience of over 650 persons. According to Rome Riebeth, Editor of "The Cine Clubber," the Minneapolis Club's organ, it was an exclusively 8mm. affair, and a big success.

Philly Club Hears Presto Sound

Highlights of the December meeting of the Philadelphia Cinema Club was a demonstration of Presto Synchro-sound by its inventor, Ralph Powell. During the demonstration an ad-libbed narrative was recorded by club-member Walter Gray to synchronize with his 300-ft. 16mm. Kodachrome production "Autumn." Reports from Vice-President B. N. Levene indicate member Gray did a successful job on both the film-making and narration.

Other films shown at the meeting included "Over The Hill," a 550-ft. 16mm. Kodachrome film in which member C. M. Booth artfully blended scenery and human-interest; "Southern Panorama," an 8mm. Kodachrome subject by the Rev. Ernest van den Bosch, and others.

L. A. 8mm. Club Banquets

The Los Angeles 8mm. Club installed its 1941 officers—President A. J. Zeman, Vice-President Foster K. Sampson Treasurer B. Bevans and Secretary Betty Barney—at the Club's annual Banquet, held this year at the Huntington Hotel, Pasadena, on December 14th. Included among the guests were representatives of the half-dozen other cine clubs in the Los Angeles district.

Highlight of the evening was the announcement by William Stull, A.S.C., Editor of THE AMERICAN CINEMATOGRAPHER and Honorary Member of the Club, of the winners of the Club's Annual Contest, which was judged under Mr. Stull's direction by a committee of A.S.C. members. First place went to Paul Remier, for his remarkable Kodachrome production "Diary," which had already gained national recognition as one of the best amateur films of 1940. The Horton Trophy, perpetual cup for the best vacation film produced by club members during the year, went to Loren Foote, who had previously captured it in 1938. Indicative of the Club's activity was the fact that 26 members entered a total of 35 films—some on 300 and 400-foot reels—and a total of 26 prizes were awarded!

Retiring President C. William (Bill) Wade, unable to be present due to his recent transfer to the Denver office of his firm, made his farewell speech via electrical transcription. The Club's appreciation was conveyed to him in the form of a copy of the Annual Number of the club's publication, "Thru The Filter," which was specially autographed by all the members and guests present.

Triangle Shoots Thriller

Celebrating their eighth year, the Triangle Cinema League of Chicago, formerly known as the J. P. I. Cinema League, have inaugurated their new officers for the year 1941. Martin Winn, formerly the Treasurer was chosen President; Samuel H. Gould, (producer of "By Rocket to the Moon"), Vice-President; Norman Abrams, Treasurer; Leo Brooks, Secretary; and Edwin Brooks, Publicity.

The League has just finished "shooting" their latest amateur movie, titled, "The Wayne Murder Case," produced and photographed by Martin Winn, script and direction by Edwin Brooks. Leo Brooks was in charge of still photography, while Jack Kovitz handled the lighting. Norman Abrams did his share by casting the actors to the various parts, 16 in all. The whole picture, 800 feet was shot in Kodachrome with good effect.

For one sequence Radio Station WEDC in Chicago was used together with all the equipment; for another, offices in the J.P.I., settlement house and club room were used. Plans are in progress to have recordings of music to go with the film and a special premiere by invitation will be held in the near future.

The story is a simple affair of a radio singer murdered by his faithless but pretty wife, involving several innocent people until the detective of the Philo Vance type solves the crime in the last fifty feet of the film.

In the cast were such notables as:

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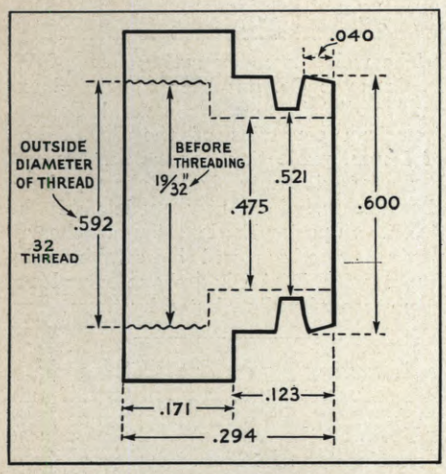
THE IDEA EXCHANGE



8mm. Lens Adapter

OWNERS of Bell & Howell 8mm. cameras may for various reasons want at times to use lenses of different speeds or focal lengths made for other cameras. This can quite easily be done by making a simple adapter. Luckily, the regular Filmo-8 lenses are mounted so that the lens-seat is quite a bit closer to the film aperture than is the case with most conventional screw-mount lenses. When I recently decided I wanted to use a Revere lens on my Filmo, I found that the distance from lens-seat to film on the Revere mount was .484", while on the Filmo it was only .313". Making an adapter for this was easy. All that was necessary was to turn out of aluminum a little collar, one end of which was an exact duplicate of the business end of a Filmo lens, and therefore fitted the Filmo's bayonet lens-mount, while the other was threaded to receive the Revere's screw-threaded lens.

The sketch shows the general appearance of the gadget, and its dimensions. In making it, I chucked up a bar of duralimin in my lathe, and turned it first to the desired maximum outside diameter. Then, without removing it from the chuck, I drilled the inside hole, leaving enough metal at the front or Revere end to permit threading. After that, I shaped the rest of the adapter as requisite. As a matter of fact, since I wanted several, I made several at once out of a single piece of metal, cutting them apart only after finishing as many of the outside cutting operations as possible. If accurately made, these adapters will prove very satisfactory, and make it possible to use any Revere lenses (or other lenses similarly mounted) on any Filmo 8.

LEON MILLER.

Projector Blimp

HOME movie shows can be put on much more pleasantly—and professionally—if you bottle up the noise of the projector with a soundproof blimp. I made a very satisfactory blimp for my Eastman 16mm. projector by making a wooden frame and covering it with plywood.

The whole right-hand side of the blimp is hinged, to open like a door so you can thread the projector conveniently. At the front is the window through which the picture is projected. This is glazed with good-quality, clear plate glass. To avoid reflections, it is best to tilt the glass forward, the way the glass in the projection-ports of theatre projection-booths is tilted. In other words, mount the glass so the top edge is about half an inch farther forward than the bottom edge.

Ventilation, especially if your projector uses a 500-watt or 750-watt bulb, is an important problem. Cut a round hole in the top of the blimp, directly above the place where the projector's lamphouse will be. Screen this with a coarse mesh wire screen. Cut a similar hole at the back of the blimp, well down toward the bottom. Screen this similarly, and mount inside it an electric fan to force cool air in from the outside. You can use the fan-unit from a cheap electric hair-dryer, or one of the midget sized electric fans that can be bought cheaply. This fan should be mounted on sponge-rubber pads, so it won't add to the noise you're trying to bottle up. It's a good idea also to mount the projector on a sponge-rubber mount, to absorb its vibration. Sometimes the plywood sides will vibrate and produce a drumming noise; this can be minimized by running ornamental metal beading-strips crosswise on the side panels.

Wire the blimp so you can use a very short cable to connect the projector to a current outlet built into the blimp. This will in turn be wired to a socket outside the blimp into which the regular extension-cable can be plugged. It is a convenience to fit the inside of the blimp with a pilot-light, too.

The whole thing can be made very neat-appearing by covering the outside of the case with Fabrikoid to give a black, brown or gray leather surface that matches the projector.

C. EARLE MEMORY.

Marking Projection Globes

IF you use projection-globes of several different sizes, according to the size picture you want to show, it is often mighty inconvenient when you have to change globes in a hurry to try and figure out which is which. If your projector, like my Bell & Howell 8, uses globes with a black metal tip-cap, this can be simplified by painting a white numeral to indicate the power of the globe on each globe-cap. You don't have to write out the full wattage—just a 3 for 300-watt, 4 for 400-watt, 5 for 500-watt, and so on. It's a great trouble-saver!

ALLEN P. SMITH.

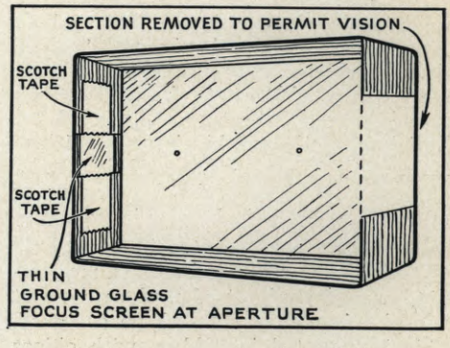
THE IDEA EXCHANGE is just what the name implies—the place where 16mm. and 8mm. cinefilmers can swap moviemaking ideas with the other fellow. The little improvised tricks you used to solve one of your cinemaking problems may be just the answer to something that's perplexing a fellow filmer—and one of his ideas may solve a problem for you.

To help out this exchange, THE AMERICAN CINEMATOGRAPHER invites you to send in descriptions of gadgets, tricks, shortcuts and methods you have used in any phase of home movie work—shooting, editing, titling, projecting, processing, and the like. If possible, send along a photograph or sketch to help make your description more clear to the other fellow. For every idea published in THE IDEA EXCHANGE, we'll give you two projection-reels and cans. Really unusual ideas will receive higher awards. When sending in your idea, let us know whether you shoot 8mm. or 16mm. to facilitate sending you the right equipment.

Magazine Focuser

SOMETIMES users of magazine-type 16mm. cameras may need a ground-glass focusing accessory for exacting work like title-making and the like, but not feel able to purchase one of the rather expensive focusing magnifiers which can be slipped into the camera in place of the magazine. Here's one I made myself, and used successfully in making micro-movies, titles and the like with a Filmo 121 magazine-camera.

Purchase a fresh magazine of film from your dealer—or if you live near a processing station, see if you can beg an empty magazine from the folks there.

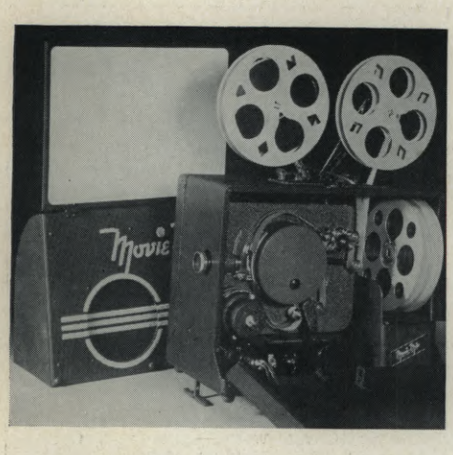


If you have to use a new magazine, remove the film in a darkroom; all you want is the magazine—and you might as well save the film for future use.

The metal parts of the magazine are

(Continued on Page 44)

...THE SHOWCASE...



Movie-Mite 16mm. Sound Projector

The Movie-Mite Corporation of Kansas City announces a new, low-priced, lightweight 16mm. sound-projector known as the Movie-Mite. Designed to fill the need for a small, portable 16 mm. Sound-on-film projector for showing business films to small groups in offices and the like, this small (25 pound) machine should find additional usefulness in supplying small-screen sound projection for home use as well.

The machine can be set up and in operation in less than three minutes, according to the manufacturers. The projector is self-contained in a case 8x15 inches in size, which accommodates beside the projection mechanism and amplifier, a screen, speaker, cords, spare lamps, reel-arms and three 400-foot reels of film. For longer shows, 1600-foot reel-arms are also available. The screen and speaker-baffle fold to fit into a compartment on the right-hand side of the case. A single cable line, permanently connected to the speaker, plugs into the projector at one end, and carries an extension which may be plugged into any convenient outlet to furnish the power-supply.

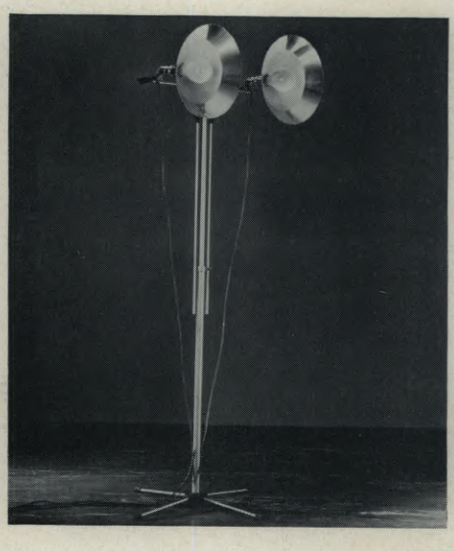
An automobile-type 50-candlepower miniature globe provides light for both projection and sound pick-up, "leaked light" from the rear of the globe being carried through an optical system to the sound-scanning aperture. Designed for illuminating the machine's usual 15-inch screen, this light is nevertheless adequate for use on somewhat larger screens up to about 30x40 inches for home use.

To reduce the general weight and bulk of the unit, a new and simplified mechanism, excellently built of modern die-cast and plastic materials has been designed. This is mounted in rubber, with oilless bearings. The result is said to be a simple and efficient unit for which maintenance and service costs are held to an absolute minimum. Further, the operation of the projector has been so simplified that the makers claim a child of ten can handle it with professional skill.

The Movie-Mite is offered in two models: a single-speed (24 frames per second) model for sound-films only, and a two-speed (24-frames and 16-frames) model for both sound and silent films. The prices are $149.50 and $159.50, respectively.

Kalart Offers Free Trial

A sample speed-flash shot at no cost is offered by makers of the Kalart flash synchronizer to acquaint still-camera users with the simplicity of making synchronized flash shots. All who write in to the Kalart offices asking about the firm's synchronizers will receive a card which, when filled out and presented to his dealer, will entitle him to have his camera fitted with a Kalart synchronizer, a bulb placed in the socket, and an opportunity to make a synchronized flash shot with his own camera—without expense.



Kodaflector Senior

The new Kodaflector Senior lighting unit for home movies and still photography, recently announced by the Eastman Kodak Co., is shown above. By utilizing the support rods in various positions, the lamps can be placed at any point from floor level to 7½ feet high, and spaced as much as 5 feet apart.

The reflectors are reversible, one side being given a bright, highly reflective surface producing a brilliant beam whose angle is well suited for movie lenses. The other side has a sand-blasted center which produces a softer, more diffuse light excellently adapted for close-up work. Each lamp is individually adjustable for up-or-down-angling. An accessory "extra assembly" is available for users who wish to add a third light to the unit.

Grace Exports S.O.S.

The well-known exporting firm of W. R. Grace & Co. has been appointed exclusive distributors for several Central American countries of the S.O.S. line of 35mm. projection apparatus. A number of equipments have already been shipped, including new models of the S.O.S. Superior-Eagle 35mm. theatre projectors, which will be combined by Grace with RCA-Photophone sound reproducers, also distributed by them.

Focuser For Filmo 121 and Simplex

Users of the more recently-introduced magazine-type 16mm. cameras have found the ground-glass focusing magazine units supplied for use with these cameras extremely useful in making titles, extreme close-ups and similar shots involving precise focus and parallax-free framing. Users of the earlier magazine designs such as the Simplex-Pockette and the Model 121 Filmo will gain similar advantages from using the Goerz parallax-free focuser and field finder control, which is specially made for these cameras. The device fits the camera in place of the usual film-magazine, and offers a full-frame focusing image magnified 4x, and a center-frame image magnified 8x for super-critical focusing. The eyepiece may be adjusted to any individual eye.

Kalart in New Factory

The Kalart Co. announces the opening of its new factory, located at 114 Manhattan St., Stamford, Conn. While the firm's general sales office remains in New York, manufacture, repairs, installations and service will be handled at Stamford, and should be sent there.

Agfa Reflector Kit

In response to continuing demand, the inexpensive Afga Reflector Kit has been

(Continued on Page 46)

J. E. BRULATOUR, INC.

Extends to

THE CINEMATOGRAPHERS

of the

Motion Picture Industry—

GOOD WILL

and

GOOD WISHES

for a

SUCCESSFUL

HAPPY

PROSPEROUS

NEW YEAR

J. E. BRULATOUR, Inc.

DISTRIBUTORS

Photography of the Month

(Continued from Page 19)

been counted among Hollywood's aerial specialists, yet in this production his air-work is tops. No pun is intended when it is said that the air scenes Smith contributes to "Flight Command" literally raise the film above the ordinary run of air pictures. They are spectacular in the extreme, highly pictorial, and handled with such skill that to this reviewer it seems doubtful if any other man in the industry could have done any better, or even equalled them.

Harold Marzorati's contribution in the many process and special-effects scenes is equally fine. The projected background scenes in particular deserve high praise. In a film of this nature there are inevitably many of them, and it is high evidence of Marzorati's success when it is said that not one of them looks like a process-shot. The miniatures, on the other hand, do not seem to fare so happily. Several of them are excellent, but certain others had an obviously "miniature" look which fitted ill with the realism of the rest of the picture. Some of this can probably be blamed on the direction, especially in one instance—a plane take-off from the beach—in which for an added, unnecessary thrill, the director made the hero's plane take off down-wind, after having previously landed up-wind. On the other hand, the film's two plane crashes must be listed as among the most convincingly handled crashes seen in a long time. This is especially true of the one, midway in the picture, where the heroine's brother's ship crashes and burns. It is an impressive bit of technical work all around.

Finally, but by no means least, endless credit should be given the many unnamed Navy pilots whose flying, individually and collectively, did so much to "make" the picture. Some of these shots, in combination with Smith's camerawork, offered the most graphic presentation yet seen of formation flying, and especially of changing formations in the air.

VICTORY

Paramount Production.
Director of Photography: **Leo Tover, A.S.C.**

This production of Joseph Conrad's South Seas melodrama is highlighted by some of the best work we've seen from Leo Tover's camera in some time. Keyed throughout in sombre, low-key lightings, Tover's photography adds measurably to the atmosphere and dramatic strength of the production.

The characterization of feminine star Betty Field is notably aided by subtle changes in camera treatment and make-up. Beginning the picture in a mood of drab despair, her characterization becomes increasingly more appealing as co-star Fredric March grows increasingly conscious of her femininity. This transition is enhanced by progressively more and more favorable photographic treatment and make-up; in each successive scene Tover makes Miss Field a bit more attractive, until at the end misogynist March's sudden capitulation is thoroughly understandable to the audience. It is a type of photographic trickery which could very easily be overdone; but Tover skillfully conceals the artifice, while using it to the full.

The film's innumerable effect-lightings are worthy of note, especially in the extreme low-key effects of the closing sequence. Here again Tover's lighting adds tremendously to the force of the action, in a sequence which could all too easily have been mishandled photographically. After filming the rest of the production with somewhat strong contrasts, there would be a very natural temptation in filming this closing sequence not merely to lower the visual key as the action requires, but to increase the visual harshness to match the melodramatic action. Instead, Tover lowers his illumination key, but softens his lighting and diffusion, producing an effect which adds notably to the dramatic suspense of the action. It is beautifully done.

KITTY FOYLE

RKO Production.
Director of Photography: **Robert de Grasse, A.S.C.**
Director of Special-Effects Photography: **Vernon L. Walker, A.S.C.**

In the accepted sense, "Kitty Foyle" is not a cinematographer's picture. The greater part of the action takes place in cramped, somewhat shabby sets which afforded Director of Photography de Grasse comparatively little opportunity for the sort of camerawork and lighting usually classified as spectacular photography. Yet for all that, "Kitty Foyle" is interesting photographically. A good part of the film's footage is in low-key effect-lightings which are excellently handled, while de Grasse's change of visual mood between these sequences and the one in the luxurious home of the aristocratic Philadelphia family is more than ordinarily deft. It helps point the drama of these scenes excellently.

There are some very interesting sequences in a speakeasy, in which the use of low sets with ceilings, combined with the selection of relatively low camera-angles and rather wide lens-angles, heightens the atmospheric value of the scenes.

The special-effects work is excellent, especially in the next-to-introductory sequence, the star's dialog with her reflected conscience in the mirror, via process projection. The story is told in a rather episodic flash-back construction, joined together with interesting optical transitions.

On the less favorable side must be mentioned the star's make-up and its consistently poor facial rendition. It makes one wonder why it is that almost inevitably when a successful light comedienne grows ambitious to play heavy dramatic roles, she turns at once to exaggerated make-up of some sort to aid her in her professional change of pace. Joan Crawford did it a few years ago —and nearly wrecked her career on a lipstick; Clara Bow tried it. Today it is the delightful Ginger Rogers who in her efforts to go dramatic has turned to make-up which, far from accomplishing her purpose, merely gives her the effect of a dirty face. She doesn't need that kind of help—and why should she saddle an excellent cinematographer like de Grasse with such an unnecessary handicap?

FOUR MOTHERS

Warner Bros.-First National Production.
Director of Photography: **Charles Rosher, A.S.C.**

"Four Mothers" isn't a particularly distinguished picture, but both as entertainment and as cinema technique it has many solidly satisfying qualities. Cinematographer Rosher has shown to greater advantage in many previous films, but in them he has undeniably had more to work with. His contribution to "Four Mothers" is thoroughly workmanlike. The opening and closing shots of the film, incidentally, deserve special comment, as they are among the more difficult dolly-shots seen in recent releases. In the first, the camera dollies up to the exterior of the house, through an open window (while, by the way, the walls, unseen, are jerked out of the way by winches to permit the passage of the dolly) to a close-up of a diploma on the wall, then to a bust of Beethoven, then to actor Claude Rains, then to Priscilla Lane, and finally to a baby playing happily on a piano. In the closing shot, this intricate camera-movement is substantially repeated in reverse. Rosher and his set crew deserve credit for some very efficient work in their smooth accomplishment of these complicated camera moves.

Rosher's handling of many of the exteriors around the Lemp home—actually built indoors on a stage—is another item deserving high credit. He manages an unusually natural outdoor effect.

Amateur filmers will find much to study in his lighting of the interiors in this home. It is the sort of a house you'll find in any community, and the lightings Rosher uses in it can well serve as a guide for lighting your own home. On this count alone "Four Mothers" is worth seeing.

Raid Aids Sound Effects

Reviewing a British showing of "Foreign Correspondent," a writer in the Amateur Cine World (London) comments, "—The German night raiders managed to achieve a good bit of synchronizing with Hitchcock's second American film, 'Foreign Correspondent' when I saw it recently. While an airliner was being blown to bits on the screen by shellfire, bombs were being dropped outside the cinema, which greatly added to the effect and produced results unobtainable with the finest modern recording!"

PREEMINENT

ALL three Eastman negative films make important contributions to the startling beauty of today's screen productions. Unvarying dependability and wide latitude make them the established favorites of critical cameramen. Eastman Kodak Company, Rochester, N. Y.

J. E. BRULATOUR, INC., *Distributors*
Fort Lee Chicago Hollywood

PLUS-X
for general studio use

SUPER-XX
when little light is available

BACKGROUND-X
for backgrounds and general exterior work

EASTMAN NEGATIVE FILMS

16mm.-Pro.

(Continued from Page 12)

have estimated the potential saving at close to $10,000 for a single high-budget production.

But to Clark's mind, this is by no means the greatest saving. "In most instances," he continues, "the saving in film-cost, though by no means inconsiderable, is a secondary element. For one thing, there is the problem of re-rigging a test-set with the arcs which are required for Technicolor. Then there is the matter of obtaining one of the limited number of Technicolor cameras available, getting it out to the studio, and into action. We have found that on the average we can make our 16mm. test and have the film out of the camera and on its way to the processing laboratory in less time than would ordinarily be required to get the Technicolor camera out to the studio and on the set.

"In that connection, too, there's a gain in getting the color test back from the lab to put on the screen. Getting the 35mm. color print back from the lab for screening is usually a matter of two days or more; with 16mm. Kodachrome, which is processed at the Hollywood Eastman Kodak laboratory, we can get our test on the screen within from 6 to 24 hours after it is shot. Definitely, we're enthusiastic about the possibilities of 16mm. for this sort of work. We're using it; we intend to increase our use of it. Under today's production conditions it is a most valuable aid to our aim of putting better pictures on the screen at lower cost."

Location Scouting

Location-scouting is another field in which 16mm. film is increasingly useful. The advantages of sending out a location-scouting crew with a light, extremely portable 16mm. outfit instead of a bulky 35mm. black-and-white or Technicolor outfit are obvious. It is no wonder, therefore, that not only 20th Century-Fox but also Metro-Goldwyn-Mayer and Paramount are making extensive use of 16mm. for this purpose.

At MGM, for instance, according to Executive Director of Photography John Arnold, A.S.C., in addition to wardrobe and other interior tests as outlined above, all locations are now scouted in 16mm. The spectacularly beautiful locations used in that studio's Technicolored "Northwest Passage" were picked from 16mm. Kodachrome tests, while the equally spectacular ones brought to the screen in "Wyoming" were similarly selected from 16mm. monochrome.

At Paramount, Camera Chief C. Roy Hunter reports that even now a location-hunting party under the photographic direction of Harry Perry, A.S.C., is scouting the Caribbean region seeking locations for two forthcoming films—Cecil De Mille's "Reap the Wild Wind" and "Dildo Cay." The former production is to be in Technicolor; its locations are being scouted in Kodachrome. The latter is probably to be in black-and-white; therefore its locations are being scouted largely in monochrome.

In that connection, reports generally indicate that while 16mm. Kodachrome holds the studio spotlight, and does the lion's share of the work, 16mm. black-and-white is by no means overlooked. Due to the lesser margins of economy in consequence of the lower cost of 35mm. black-and-white as compared to color, however, only about half as much 16mm. test-footage has been shot in monochrome as in color.

16mm.'s Limitations

To date, the limitations of 16mm. for testing seem most apparent in two fields. The first is in make-up and character tests, which as a rule demand the utmost accuracy in photographic rendition, and are accordingly usually shot in 35mm. black-and-white or Technicolor, as the case may me. Obviously these tests must give results absolutely identical with those which will come when the production gets actually under way in 35mm., and due to the differences, slight as they are, between the 16mm. and 35mm. emulsions, standard film is as yet considered preferable.

As regards this, however, Paramount's Hunter remarks, "There is no reason to believe that these limitations need be permanent. For one thing, 16mm. emulsions and processing are constantly improving. For another, we are learning more all the time about handling 16mm. Remember, we've been shooting 35mm. for many years—but we've been shooting 16mm. professionally for only a matter of months. Present indications are that corrective filtering may soon be able to compensate for all these differences, and enable us to obtain in 16mm. precisely the same screen results we will get in the 35mm. production. At any rate, we at Paramount are using 16mm., we like it, and we intend to learn all we can about what it can do for us."

The second limitation of 16mm. is in the matter of making tests that require the use of sound. At present, 16mm. sound does not appear to be productive of results equal to the best of 35mm. studio recording, though it is undoubtedly, when recorded and reproduced on the best 16mm. equipment, comparable to what is heard by the ultimate customer when that best 35mm. recording is projected by the average smaller theatre. But the sound in talent and character tests, like the picture-element in such tests, must be identical to the best obtainable under actual production conditions, so 35mm. is used.

This is, however, no indication that 16mm. cannot ultimately be used even for this purpose. It is known that all of the studios making use of 16mm. have been making exhaustive studies of 16mm. sound, as exemplified by such units as the Berndt-Maurer, the Auricon, and other modern 16mm. recording units.

This professional 16mm. activity is by no means one-sided in its benefits. If the studios have found a valuable means of economizing in pre-production expense and in making it possible to put more of each production dollar on the theatre screen, 16mm. is benefiting as well. Film, methods and equipment are receiving the acid test of professional studio use. Professional-type cameras and recorders, like the Berndt-Maurer "Sound-Pro" and at least one as yet undercover professional 16mm. outfit from another major manufacturer, are getting the benefit of testing, criticism and suggestions from the industry's most exacting cinematographers, recordists and engineers. In short, out of this new-day economy move, not only may Hollywood find new tools and methods, but 16mm. seems sure to make noteworthy strides during the coming year!

Kodachrome

(Continued from Page 25)

the light sources. By placing orange cellophane on the source used for back-lighting the hair and one cheek, a feeling of warmth can be added to the subject. Blue light will give a moonlight effect and yellow light will appear as a sunset glow. Green lends an air of mystery to a scene, while a carnival atmosphere can be obtained by using many differently colored light sources.

Naturally, the use of colored light will necessitate the increasing of the exposure, but this can be determined by reading the meter through the cellophane before placing the colored medium ahead of the light sources. We are all familiar with the calenders having the beautiful girls that are rimmed on one side with an orange light and on the other with green or blue, while the front-lighting is composed of yellows and pinks. You can get this same effect if you place your colored light sources properly—and if you can get the beautiful girls.

In set lighting, certain colors can be subdued by lighting with colored sources. If the room contains brilliant red drapes and light blue furnishings, a pale blue light will subdue the brilliance of the drapes, yet will not affect the coloring of the furnishings. Likewise, a light orange light will subdue prominent green or blue objects. It is not advisable, however, to use colored sources entirely through a sequence or scenario as the unbalanced color renditions will detract from the beauty of the majority of sets. It's use is only suggested for special effects or novelty. And take care in letting it fall on faces except when you definitely want a colored-light effect!

Lighting for color film, in fact, an easier task for Kodachrome than for panchromatic stock. The renditions of degrees of light and shadows are easily acquired in Kodachrome as the presence of color augments the contrast. Where the contrast can be acquired by the use of shadow and color, in panchromatic filming this must be acquired by light alone. By using the same lighting effects in Kodachrome as you do in black and while, you gain the advantage of enhancing your scene with the addition of color. Watch the effects in color on the professional screen and try to get the same results by disregarding the old rule of flat lighting.

It's a KODACHROME Winter

WHEREVER you are, wherever you go, this is a Kodachrome winter. Even the apparent black-and-white of a northern winter scene is rich in color. Kodachrome Film finds and reveals that color. Add the gay color of winter sports costumes, and Kodachrome becomes even more important.

In the South and West color dominates every scene, color for you and your Kodachrome-loaded movie camera to relish. Indoors, of course, Type A Kodachrome means movies in color under Photoflood light, no matter what the weather outside may be.

Ciné-Kodak Kodachrome Film is available for both 8 mm. and 16 mm. home movie cameras. The cost of expert processing and return, within this country, is included in the purchase price. *16 mm.* 100-ft. roll, $8; 50-ft. roll, $4.30; 50-ft. magazine, $4.65. *8 mm.* 25-ft. roll, $3.40; 25-ft. magazine, $3.75.

★

EASTMAN
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N. Y.

Progress

(Continued from Page 7)

veloped by Mole-Richardson, Inc., and improved carbons developed by the National Carbon Company. These units were the result of the activities of the Special-Process Committee of the Academy Research Council, and have already resulted in marked increase of the scope and quality of back-projection cinematography.

Two productions—Paramount's "Dr. Cyclops," and Hal Roach's "One Million Years B.C."—were released as outstanding examples of special-effects camera-work. The former made notable use of the possibilities of projection-shots in Technicolor, while the latter offered a remarkable example of the use of multiple exposure and printing techniques to produce a composite in which real people appear with actually small lizards, etc., enlarged to the proportions of prehistoric monsters.

Set Design

In several productions the beginning of a definite new trend in set design could be observed. This is characterized by the use of low proportions, and in some cases by having part or all of the set roofed over with a low ceiling. The results on the screen—photographically and otherwise—are extremely interesting.

Laboratories

A new entry in the field of high-quality 35mm. laboratory work appeared in the Frank Williams Film Laboratory. Long known as outstanding specialists in sound-track processing, this plant expanded during 1940 to handle picture-negative processing and daily and release printing, taking place as one of the largest-capacity independent plants on the Pacific coast.

The adoption of fine-grain positive for printing proceeded conservatively, due to the light-source problems involved, with the utilization of this stock confined largely to sound-track prints for re-recording and similar special uses. Some of the plants in which this film was used employed over-voltaged mazda light-sources with appropriate filters, while others utilized various forms of high-intensity mercury-vapor arcs.

Bell & Howell introduced two much-needed units for reduction printing from standard to substandard film. One was the microsound printer, for sound-track; the other an optical reduction printer for picture. The latter could be equipped to make reduction prints from 35mm. to 16mm., 35mm. to 8mm., or 16mm. to 8mm.

Late in the year ERPI introduced a valuable new sensitometric tool in the Integrating-sphere Densitometer. In this, a hollow sphere, the inner surface of which is finished in white, and fitted with a photoelectric cell, is substituted for the human eye as the density-measuring instrument. The current from the photocell is transmitted to an indicating meter which is calibrated in terms of density. The new device eliminates visual comparison of densities, and should prove much more accurate for sensitometric measurements than previous visual densitometers.

R. H. Talbot of the Kodak Research Laboratories announced the development of a lacquer which when applied to motion picture film minimizes the damage ordinarily done by cinch-marks and similar abrasions, and the mottled effect produced by oil thrown from the projection mechanism. The lacquer may be applied to one or both sides of a film, and when the print appears badly worn may be easily removed and replaced with a fresh coating, giving the print virtually a new lease on life. The solution may be applied to 35mm., 16mm., or 8mm. film, either black-and-white or color. It is said to have no harmful effects on the dyes of color film.

Sound—35mm.

Without doubt the most sensational development in 35mm. sound-recording technique was ERPI's introduction of Stereophonic recording and reproduction, which gives substantially third-dimensional sound. Since this process requires three completely separate recording and reproduction channels and their associated equipment, with in addition a fourth control-track channel, it is scarcely surprising that nothing has as yet been done with the process commercially. It seems likely therefore that in spite of its admitted aural perfection, this method will not be used commercially in motion pictures for some time, if at all.

A distinctly similar system has been developed for use with Walt Disney's special feature, "Fantasia," and is to be temporarily installed in each theatre in which this production is to be road-showed. While this "Fantasound" has not as yet been demonstrated on the Pacific Coast, it appears, like the Stereophonic system, to involve a multiplicity of sound-tracks and reproducing channels, with, however, loudspeakers located at various unconventional points in the auditorium—including the rear of the house—so that any given portion of the recorded sound may be made apparently to come from any direction, or even pass completely around the listener. It appears, too, that in this case manual control is substituted for mechanical control by means of a control track.

Somewhat more practical seems the new method of automatic volume expansion developed by RCA and publicized by RCA as "Panoramic" Sound and by Warner Brothers under the name "Vitasound." This involves substantially conventional recording, plus a control-track printed along the sprocket-hole area of one edge of the film. This in turn cuts in or out additional amplifiers and speakers added to the conventional reproducing channel.

Sound—Substandard

Without doubt the most significant immediate development in the 16mm. sound field was Eric M. Berndt's introduction of the "Auricon," a compact, popular-priced 16mm. (double-system) recorder of radically new type. The recording unit, which is daylight-loading, fits with its power-supply, microphone, and all associated equipment save picture-camera and camera driving-motor, into two cases each about the size of a portable typewriter-case, each weighing approximately 20 lbs. The recorder is as nearly foolproof as is possible, and can be used with any 16mm. camera to which an electric driving-motor can be fitted.

In the amateur sound field, Presto "Synchro-sound" provides a method of synchronizing camera or projector (either 16mm. or 8mm.) with disc recording or reproducing units to provide synchronized music, narration or even directly synchronized dialog for amateur films. The device consists of an electrical synchronizing unit attached to the record turntable and controlling the motor driving either the camera or the projector, as the case may be.

Projection

In the substandard field, a notable improvement in 16mm. projection was the development of improved carbons for the high-intensity arc lamps used in the various 16mm. arc projectors. These new carbons burn with a somewhat redder light-flux, giving a warmer and more natural rendition of Kodachrome.

Improved incandescent projection-lamps for both 16mm. and 8mm. projection on extreme large screens were also introduced. These are the so-called "10-hour" lamps which, by making use of the Photoflood principle of over-voltaging, provide increased intensity at the expense of shortened life. A 400-Watt lamp of this type will produce approximately 50% more light than a conventional lamp of equivalent wattage, and approximately 20% more than a conventional 500-Watt lamp. The life of this lamp, however, is reduced to an average of about 10 hours.

An interesting accessory for home projection is "Add-Color," invented by William Millar of the Los Angeles 8mm. Club, and marketed by Freidel's, of Huntington Park, Calif. The device consists of an 8-segment color-disc placed in front of the projector, and rotatable so that the projection beam passes through any one or two of the color-segments, producing a tinted effect in black-and-white pictures.

During the past year, too, larger reels for 8mm. projectors were developed as three projectors—Ampro, Revere and Eastman (Model 70-A)—were equipped to accommodate 300 and 400-foot reels in addition to the conventional 200-foot size.

Still Photography

As was predicted last year, the war's virtual elimination of camera-imports from Europe resulted in the introduction of a remarkable number of high-grade, American-made still cameras, too numerous to mention individually.

A most significant innovation in still laboratory methods was the introduction by one manufacturer of a bromide paper capable of a considerable range of contrasts through the use of different filterings.

Photoflash technique advanced through the development of a new range of super-powered midget-size flashbulbs to-

gether with associated flash-reflector equipment which permit either "spot" or "flood" effects with these globes.

At the other extreme was Eastman's introduction of the "Kodatron" super-speed flash lamp, derived from Edgerton's researches, for extreme high-speed synchro-flash photography at speeds up to 1/100,000 second.

Little England

(Continued from Page 10)

working would not justify a sequence of an industry. At Kokosila, a Mrs. Corfield had been very active in encouraging the Indians to develop their arts. She had set up a trading post where the Indians could have instruction and learn to improve their designs and workmanship. It was also a marketing place for their wares and Mrs. Corfield had a large stock of goods on hand. In addition her back yard contained a row of ancient, authentic totem poles.

From there on the sequence was obvious. Mrs. Corfield persuaded a group of Indians to come in to the trading post and bring their equipment and articles that were partly completed. The stage was set in front of the totem poles—one woman was carding wool, another spinning and rolling up yarn and another knitting. Several men were placed on the set carving totem poles, mending fish-nets and cleaning guns. The whole set-up was like a six ring circus, but all of the essential steps in the sweater making industry were included in one general view. The Indians, once placed in position, were easy to work with. They stayed put and kept right on working, never looking at the camera as we moved the equipment all around them—low down, high up, over their shoulders, sidewise and right in close.

For some more real English flavor, we located a typical English inn, The Royal Oak Inn, on the outskirts of Victoria. The building was perfect outside with thatched roof and inside with a large fireplace, beamed ceiling and all the trimmings. There was a huge silver roast serving tray with rounded cover—so we staged a dinner. The chef in white suit and cap cooked the traditional English roast beef with Yorkshire pudding. When the lid was raised and a slice of the beef carved, you could almost taste it since the camera was brought in for full close-up, and slight back lighting made the juice stand out realistically.

A detailed sequence was made also of a maid preparing a typical tray of tea. General views and close-ups of the dining room followed logically.

Still looking for subjects that maintained the "Little Bit of England" theme, we learned of Church Parade, a traditional ceremony on Sundays at Work Point Barracks. With snappy military precision, crack regiments marched onto the Parade Ground and formed with three sides facing a flag-draped altar. As the Chaplain took his stand, the men bowed their heads in prayer. Then they sang lustily. During the service, the men sat on the ground and after service they marched off in quick time to the swing of bagpipes and drums past the Commanding Officer. A high shot was obtained of the whole formation from the attic of a building nearby, and close-ups were made of all the essential features. As we did not want to disturb the solemnity of the occasion, we arranged to make the close-ups of the Chaplain after the services.

There's a snappy girls' drill team with white suits and high hats in Victoria. We made a tricky sequence of them drilling on the Parliament lawn, always keeping this imposing building as a backdrop.

In one of the parks of the city, they have assembled a large collection of totem poles. As the display was just being arranged, it was an opportunity for action. We made scenes of the men arranging and painting the totem poles. This of course was a relief from the usual procedure of having tourists looking at museum pieces.

For an ending of the reel we found just the ideal feature—Toasting the King. This traditional custom is enacted on regular mess night at English military and naval posts throughout the world. Our scene was made in the officers' mess of a coastal battery fortress. Every detail was prepared under supervision of one of the officers. Lights were installed overhead and a camera position selected to include the whole table, with fireplace and mantel in the background.

Over the mantel was a splendid portrait of His Majesty, King George VI of England. Toasting the King is done at the end of the meal after the table is cleared and before coffee and cigarettes are served. Port wine is used.

We made a general view just as the formal toast was given but arranged to have re-enactments for the close-ups since we had only one camera on the job. For a final shot we made a full close-up of the portrait of the king.

This impressive custom of Toasting the King told convincingly the story of that great binding force that holds the British Empire together throughout the far corners of the earth. For our "Going Places" travelogue it was like a trade-mark which unmistakably stamped our product "A Little Bit of England."

Bill Daniels

(Continued from Page 8)

how it ought to be diffused, and all that. I thought I knew lighting pretty well myself, but let me tell you, I'm getting a college education in the art of precision lighting watching him light even the most commonplace shot!"

Daniels is an inventive fellow, too. He has started more than a few photographic trends and gadgets that have since become accepted practices in the industry. Characteristically, they're largely simple, commonplace bits of logic which, once you see them applied, make you wonder why you didn't think of them yourself.

One of them was his celebrated bicycle-horn. It began several years ago, when he was filming (as he did for some fifteen unbroken years) one of Greta Garbo's productions. In that troupe, as in most others, while the Director of Photography lights the set, the stand-ins take the places of the principal players, who in turn take it easy in their dressing-rooms. When the lighting is completed, the cinematographer usually passed the word verbally to the director, who in turn sent an assistant to summon the stars for final rehearsals and the actual "take." But this verbal word-passing took time, and added a note of confusion to the otherwise orderly routine of production.

So Bill bought a bicycle-horn, and attached it to his camera-blimp. Then when his preliminary work was over, he could simply reach up and squeeze the bulb, and a few peeps on the horn gave everyone the signal at once. The stand-ins would step out, Miss Garbo would take her place before the camera—and production would go on with a minimum of confusion. Soon cinematographers in most of the other major studios had fitted their cameras with similar hooters. But about that time, Daniels discovered the drawback of that horn system—in his case, Greta Garbo's sense of humor. When she felt the waits between scenes were too long, she took pleasure in stealing up behind Daniels —and squawking the horn herself!

Soon after, Daniels originated the "peeping microphone." Often a Director of Photography finds it helpful to survey a set through the camera's focusing ground-glass, the while giving instructions to electricians, players, and others. But when his head is buried in a sound-proof camera-blimp, even the loudest voice won't carry far. And Bill Daniels hates to raise his voice.

So he persuaded the sound department to install a small microphone inside his blimp, with an amplifier and loudspeaker mounted on the outside. Then, when he was peeping through his camera, he could issue instructions to anyone on the set quickly, easily, and intelligibly, no matter how large or how noisy the set might be. Again, similar gadgets blossomed out on cameras in almost every other studio.

Most recently, Bill has added a new gadget to his camera. Like many another cinematographer, he finds it useful at times to mount a few lamps on his camera for front-lighting close shots. At present, using Super-XX, he employs two—sometimes three—"dinky inkies" and occasionally a miniature "broad."

Now when you have two, three or four lamp-cables—to say nothing of the loud-speaker power-line and the camera's motor-feed cable—trailing from a camera that is to be making an involved dolly-shot, your crew has a most confusing mass of spaghetti to keep untangled.

So Bill decided to simplify the spaghetti situation. In a convenient spot at the side of his camera-head he has mounted a six-outlet electrical junction-box. Into one outlet he plugs a power-line. Into the remaining five, he connects short feeder-cables leading to his amplifier, his lamps, and any other electrical accessories he may need. Recently, while making retakes of a high boom-shot, he wanted to make a last-minute check on the scenes he was to match. His assistant passed up to him the light-tests of the scenes involved, together with the illuminated light-test viewing-box. Twenty feet in the air, Bill calmly plugged the light-box's feeder to his mobile supply-panel—and without further fuss or confusion compared his lighting set-up with the scenes he was to match!

Night-Effects

(Continued from Page 11)

comer, is named "Pan-K," after that firm's pioneer emulsion of the type. But it, too, is vastly improved from its predecessor of years ago. It is perhaps the fastest of today's infra-red emulsions; it requires only moderate filtering, and can be made to yield the high-contrast results sometimes necessary in night-exterior background plates and other night-effects.

Thus it can be seen that each of these products fills a special need in modern dramatic cinematography, and as such forms an invaluable adjunct to modern camera work.

From tests made by the writer and others, it seems clear that where light-conditions are favorable, permitting exposures on the order of f:4.5, and the effect desired is one of comparatively soft contrasts and gradation, the Agfa product offers an ideal choice, as such recent productions as "Arizona" prove.

Where a slightly higher contrast is desired, and especially where a normally dark rendering of foliage is paramount, Infra-D presents particular advantages. Tests thus far made indicate this film does best with an average exposure (under normal conditions) approximating f:5.6. It is understood that emulsions somewhat faster than the one tested have since been produced.

Where light-conditions or any other factors call for higher speed or smaller lens-openings, the Pan-K product is certainly the choice. Under normal conditions it may be exposed at around f:8 and still give a negative with excellent shadow-detail.

Thus we have that rare—and extremely desirable—situation in which three ostensibly competitive film products do not in reality compete with each other, but instead supplement each other to a remarkable degree, each offering the alert cinematographer a specialized film for special conditions. Such a circumstance is always to be desired, but nowhere more than in a field where at best there are such technical complications as are found in making filtered exterior night-effects.

It must also be pointed out in any discussion of the night-effect problem that many cinematographers find there are certain situations in which none of the various infra-red products will give him precisely what he wants. This is especially true in making filtered daytime night exteriors in which people figure prominently — especially certain players who dislike to wear the somewhat unnatural-appearing infra-red make-up, or even insist on wearing no make-up at all.

In this event, the concensus of opinion among cinematographers appears to be that the film manufacturers have provided yet another tool for solving the cinematographer's problem. This is in using a conventional panchromatic emulsion, suitably exposed and filtered with a night-effect filter like the 23A-56 combination. This treatment appears to give the most favorable results in really close work where the principal players and their appearance are involved. Either a production-type emulsion like Plus-X or one of the slower, outdoor-type films like Background or Background-X may be employed, as conditions and preferences may indicate. With understanding handling, there appears to be no reason why the closer shots cannot be made in this way, and successfully intercut with long-shots made on whichever type of infra-red negative may suit the occasion.

In view of all this evidence, it would seem very much to the cinematographer's advantage to familiarize himself with the modern range of materials for making filtered night-effects, so that he can

choose accurately the technique which will solve his immediate problems most easily and accurately. And certainly he should be grateful to the research chemists who have provided such a variety of tools for his work, and the spirit of American competition which has spurred them on to such achievements for his benefit.

South America

(Continued from Page 14)

the world. I was very much amused while watching one director working. He had clipped an illustration from a well-known American fan publication. With this in his hand, he was most meticulous in placing his characters ex actly in the same positions as illustrated in the clipping! The majority of the Argentine films snow definitely from which films certain sequences are lifted. I remember one particular film that was made up of three different thirds of three different Hollywood films! Please understand that this does not include *all* of the Argentine directors. There are several who have shown real ingenuity. One in particular has shown great talent, with his first production. Some of the others show their genius by turning out first rate films with a very limited budget.

The "Iluminador," as the first cameraman is called in South America, is usually European. One of the best is a Swiss. There are two or three Germans, a few Frenchmen, a few Spaniards, two Americans, and there was one Czechoslovakian, who has since left. Lately, a few natives have obtained assignments, but as yet have not shown great talent. Most of the operative cameramen are natives, as are the assistants and the other studio employees.

Almost all the sound-men are natives. From whence these sound-men have come, I do not know, but they have succeeded in spreading a deep veil of mystery around the art of sound-recording, creating the impression that a sound-man is a specially endowed person with some mysterious eighth sense. There is absolutely no cooperation between the studios, and there is a feeling of animosity between the employees of the various producers, much as existed in this country before the organization of professional groups like the A.S.C.

Up to the time I left, there was no organization of the studio employees. The aloof attitude makes this difficult. Except among the extra players, most of the film people seemed satisfied with the conditions. There is no fraternal sentiment or feeling of good fellowship, as found among the workers of the United States film industry. I found congenial company among the Americans in Buenos Aires, and among the Newspapermen and trade-paper writers.

Before closing the Argentine chapter, I must say that I left Buenos Aires in the fall of 1939. Since that time, some improvements may have been introduced. However, I believe that the basic conditions are very much the same. Long-used methods to which they have become well accustomed, are not quickly discarded. The old school has erected a fortress, in fear of new methods, and these walls are not easily scaled.

Having completed my contracts, the old "Wander Bug" came out of dormancy to do his dirty work. It's about time I went home to see Mom and Pop again. I came down by the East coast, so I'll go back along the Pacific coast to see what those countries look like.

Arrived in Santiago, looked around a few days, and as I have said, I was offered a contract to produce and direct films in Chile. So my homeward trek is delayed a while. This was certainly virgin territory. No studios and no regular producers. Several feature films have been produced, but the producers make one film and then throw up their hands. There are two sound-recording equipments, a couple of Bell & Howell cameras, an Eyemo or two, and a few DeVry spring jobs.

In order to obtain a fair quality picture, I set up my own laboratory, using a celluloid apron with 500 foot capacity, made by Correx. I was fortunate in having access to a good automatic step-printer and a very well built non-slip sound printer.

I soon found that I would have to handle every foot of film with my own

hands, or stand and watch over my assistants every second. Native labor will follow instructions only as long as you stand vigilant over them.

Of the two sound equipments, one is native-built and owned jointly by a radio-station operator and a manufacturer of sound reproducer equipment. The manufacturer, a precision machinist, built the mechanical parts of the equipment, while the radio-owner built the amplifier equipment. They personally operate the equipment. Recently, they installed one of the Berndt galvanometers. Previously they used a German-made Siemens galvanometer, but the war has precluded obtaining replacements.

The other sound equipment is operated by the local RCA representative. The truck is in charge of a young fellow who turns out a first class job of recording.

The greatest handicap to the Chilean producer is the laboratories. There are a few rack-and-tank laboratories, which could turn out better work if they would take the care necessary.

There is a government-owned laboratory, which was organized ostensibly to produce educational films for the Chilean schools. As they have gone into competition with the private producers, and are not producing educational films, there is quite a hue and cry about them at the present time. They have gone in quite heavily on the production of commercial films, on which the private producers have been living heretofore.

Up to the present, the features that have been produced have had to work under very limited facilities. In spite of these limitations, the results are quite good. Exteriors make up a good portion of the films. When interior sets are required, all kinds of makeshift facilities have been put to use.

The stage of the municipal opera house was used for one film. Another producer used an old "haunted" house on the outskirts of the city, finding its magnificent large halls a great advantage. The studios of the radio stations are used very often. The producer of one recently released film has begun construction of a studio. He will use the rental facilities available, at first, equipping it permanently after the industry has become somewhat stabilized.

American Kodak and German Agfa materials are used, in about equal popularity. Eyemo 100-foot spools are available only on order placed six to eight weeks ahead. The Kodak agent stocks Plus-X negative, Sound-Recording stock, and Positive stock only. If you want Background-X or any other stock, you have to order it in advance. A very congenial fellow, he offers every accommodation at his command, and the Agfa agent is also very accommodating.

A few words of advice to anyone who might be considering a South American trip for the purpose of working and making films. If you are the kind of fellow who needs all the refinements and facilities of Hollywood, forget South America. If you have the experience, and can produce films with practically no facilities except a camera and a tripod, if you can take apart and reassemble your own camera in event of any trouble, if you are satisfied with a decent living, but not a luxurious one, and you have the patience of Job, go to South America. You won't get rich, but you will enjoy yourself. Be prepared to do most of the work personally.

The most important thing to remember, regardless of where you travel, or for what purpose, WHEN YOU ARE OUTSIDE OF THE UNITED STATES, YOU ARE THE FOREIGNER.

Film Speeds

(Continued from Page 17)

certain constants from the characteristic curve. In the making of a characteristic curve the photographic material is given a series of exposures on an instrument known as a sensitometer. In this instrument the spectral quality of the radiation and the time of exposure are made to match the average conditions in photographic practice as closely as possible. The exact shape of the curve is influenced by the type of exposure and development used, making it imperative these conditions be exactly those for which the characteristic curve is intended to apply. Usually the finished sensitometric strip looks like a series of gray areas.

After the sensitometric strip has been exposed and processed, density of each of the exposed areas is measured by a densitometer. A typical characteristic curve is shown in Figure 1.

In Figure 1 an attempt has been made to illustrate how the sensitometric method operates. At the top of the figure is a series of prints made from the negatives shown immediately below them. A series of exposures was given so that a range from badly under-exposed to very dense negatives was obtained. The best possible print was then made from each of the negatives. It will be noticed that as the negative exposure increases the resulting print quality increases rapidly to a high value and then remains substantially constant for further increase in negative exposure. The speed of the material is determined from the negative exposure required to yield the first excellent print.

The characteristic curve for the negative material used is shown in the lower portion of the figure. The slope, or gradient, of the curve at any given point indicates the rate of growth of density with change in log exposure and thus shows the difference in photographic effects resulting from a given difference in scene brightness. It will be seen that the gradient produced by the photographic material differs with the exposure.

In the illustration the negative which produced the first excellent print was so exposed that it used the portion of the characteristic curve indicated between the log exposure values A and B.

The average contrast of the negative is indicated by the slope of a line drawn from the lightest to the densest part of the negative which in this case is the line CB. Since the characteristic curve does not have a straight line throughout the range of densities covered by the negative the gradient varies from one part of the negative to another, the lowest contrast being in the shadow region of the picture as indicated at C.

It has been found, as a result of a comprehensive research, that if the gradient in the deepest shadow portion is .30 of the average slope for the entire negative, the negative is capable of yielding an excellent print. If the gradient for the deepest shadow is less than .30 of the average slope of the negative, inferior prints will result. Thus it is evident that the concept of speed, namely, that speed is related to the minimum exposure required to give a negative from which an excellent print can be made, is equivalent to the sensitometric criterion that the gradient for the darkest portion of the subject shall be .30 times the average gradient of the negative.

This method of determining speed has been substantiated not only by the statistical fact that sensitometric results agree excellently with those found by actual picture-taking practice but by theoretical considerations as well. Since the quality of a photographic print depends upon the manner in which brightness differences have been recorded by the negative and the print materials, it is clear that any method for properly evaluating speed must be based upon the ability of the material to record brightness differences. The new method in laying emphasis on the gradient characteristics of a material, is distinctly superior to the previously-used methods for determining speed.

As mentioned before, the shape of the characteristic curve is dependent upon the exposing and processing conditions used. The light source used is that adopted by the International Congress of Photography in 1928, and consists of an incandescent lamp filament operated at a color temperature of 2360 degrees K and screened by use of a specified liquid filter to give radiant energy of a quality closely approximating that of mean noon sunlight.

The development of roll films and film-packs is carried out in a metol-hydroquinone developer approximating that used in photo-finishing houses of the United States. The developer specified for the miniature-camera films is a slower acting developer and is widely used in the processing of miniature-camera negatives.

For testing purposes the developer agitation must be equivalent to that obtained by a hand-agitated Dewar flask fitted with a device for holding the exposed sensitometric strip. All materials are developed to a specified degree of contrast rather than for a fixed time.

The present publication deals only with a method of determining speed of a specific sample of photographic material. As yet the details have not been worked out for applying the method to the assigning of a speed number to a product as a whole. The latter phase of the problem is being considered and no doubt some recommendation will soon be available.

Another important phase of the speed problem is the determination of recommended exposures for normal picture-taking practice. It is clear that the present specifications are not quite adequate for this problem since they indicate the minimum exposure required for excellent results only for a specific piece of material when used under a specific set of handling conditions. Recommended exposures must take into account variations in processing, in film sensitivity, in the measurement or estimation of scene brightness, and similar variables which cause the user to obtain slightly different effective exposures than what he expects. The average consumer must use an exposure-value which includes a margin of safety such that he is assured under all conditions at least enough exposure to produce excellent results. Such information can be used either in the form of printed exposure guides or in connection with exposure meters.

Thus far the committee has not had an opportunity to give serious consideration to the details of this problem of determining recommended "calculator numbers" or "meter-setting values." It is clearly recognized, however, if the whole photographic industry is to derive maximum benefit from the standardization project, that specifications must be drawn as soon as possible to extend the method for measuring speed of a specific sample to the assigning of a speed number to a product as a whole.

Viewer

(Continued from Page 27)

stores for from $25.00 to $45.00. I understand that the Eastman Company has discontinued service and parts some years ago, but if care is taken of the mechanism they will give many years of service.

A more modern viewer and sync machine has been recently installed in the cutting room of the Pacific Laboratories. The old Model A "War Horse" has since been retired to my own home for such cutting that I may want to do away from the plant on my own films.

Micro-Movies

(Continued from Page 24)

can try the more powerful lenses. Experience will also show that magnification can be materially increased by increasing the distance between the microscope's lens and the frame-aperture of the camera.

Let me say right here that it is the microscope lens that does the work of making the picture. The camera's lens should be removed. Just as a telephoto lens replaces the camera's regular lens for extreme long-range shots, so the microscope's lens will replace it for these extreme short-range shots.

The average focal length of a cine-camera-microscope combination may vary from twelve to twenty inches or even more, depending upon the characteristics of the lens used in the microscope. Therefore, just as in using any long-focus lens on your cine-camera, it will be necessary to provide a light-tight, tubular extension between camera and lens. The barrel of the microscope forms only part of this. The rest must be provided by a tubular collar which at one end fits into the camera's lens-mount exactly as a regular lens would, and at the other end fits into or over the upper part of the microscope's tube, usually over the ocular or eyepiece, the lens of which is removed.

These collars can be made very easily; their exact dimensions must naturally depend upon the type of camera and microscope used, and upon the focal length of the microscope lens. It is a very good idea if possible to have the microscope end of the collar so made as to give a sliding fit, to permit focusing adjustments, supplementing the regular focusing adjustment of the microscope-lens.

In my own case, the microscope-adapting collars used were specially made by Bell & Howell. They were made of strong aluminum, machined at one end to an inside diameter to receive the end of the microscope eyepiece, and threaded at the other to fit into the camera's lens-mount. They were painted a flat black inside, to eliminate internal reflections. Their cost was nominal.

It is best to remove the lens from the microscope's eyepiece, whenever this is possible. When a demonstration or beam-splitting eyepiece is used, the upper viewing lens should be removed, while the right-angle one should be left, to serve as a monitoring finder. The use of this type of eyepiece is very necessary when filming some of the livelier forms of micro-organisms like the paramecium, which wanders uncertainly about the field like a streamline car out of control. When using this type of eyepiece, the exposure must naturally be increased to compensate for the division of light through the prism.

Another fundamental point in micro-cinematography is conservation of the light used to illuminate the tiny subject, especially in the case of living organisms. To put it differently, the cine-micrographer must think in terms of the welfare of his actors. A drop of water, blood or culture-solution on a microscope slide does not take a great deal of heat to bring it up to the boiling-point—and if you'll recall the life of Pasteur, you'll remember that Pasteurization, which kills most bacterial and similar micro-organisms, consists simply of subjecting things to a temperature considerably less than the boiling point of water. And any light source used for photography radiates with its light an embarrassing proportion of infra-red or heat rays.

Therefore think in terms of the camera to the "bugs," rather than the "bugs" to the camera. Use the least light you can, to insure the health of your minute actors and yet insure a reasonably well-exposed film.

What type of light should one use? In some microscopic laboratories carbon-arc spotlights are used to illuminate microscopic studies. This light is usually very powerful, and is quite satisfactory for black-and-white camerawork. However, it is rather too strongly blue for most Kodachrome work, and in addition it has the additional drawback for motion picture use that the light flickers as the carbons burn away.

The writer discovered that for his own Kodachrome micro-cinematography a very suitable light-source was provided by the ordinary Photoflood lamp, suitably housed and shining through condensing-lenses that concentrate its beams on the sub-stage mirror of the microscope. While I have not had any opportunity to try it out in practice, it seems likely that one of the new "dinky inky" midget spotlights, fitted with a suitable concentrating snout, would be excellent for this sort of work.

Control of exposure must be done by varying the strength of the illumination,

since the camera's lens and its diaphragm have been removed. This can be done in one of several ways. One of the simplest methods is simply to move the light nearer to or farther from the microscope, letting the old law of inverse squares do the trick.

Another way is to increase or decrease the strength of the light by means of a rheostat. This is quite satisfactory in black-and-white, but not so good in color, since the light grows redder as it is dimmed.

Still another method is to interpose an iris diaphragm between the lamp and the microscope. This is one of the best methods I have found, since it can provide a very accurate control. Some microscopes are fitted with a diaphragm of their own, placed directly under the stage. This can be used for exposure-control, but I prefer to use an auxiliary diaphragm at the light itself. You will often find that you will get the most critically sharp results if you set the sub-stage diaphragm at its smallest stop, and thereafter leave it alone.

The matter of exposure is best settled by practical experiment. In my own case, I found that it was one place where a Weston exposure-meter for once didn't give me much help. The best advice is to make test shots under various light conditions, carefully noting down the data concerning each in a notebook. Make a wide range of exposures, shooting only a few frames of each, with a black frame or two between each exposure-test. Send the film to the processing laboratory, and after carefully examining the results, you will easily see what is the proper lighting set-up for that particular subject. Incidentally, you will find that exposure varies according to the subject: a subject that has a great deal of rather solid matter will naturally be more dense, and require more light than one that is comparatively clear, with only a few tiny crystals or micro-organisms in the field.

What type of film to use is a matter of preference guided by one's pocketbook and by the type of subject being filmed. It is true that black-and-white offers wide latitude in the choice of emulsion-speeds, and perhaps in cases where for any reason lighting or exposure are critical factors, these high-speed films may be an advantage. But let it be remembered that these super-speed films usually have a rather coarse grain, which does not adapt itself at all well to really fine micro-cinematography.

In almost all cases, I believe Kodachrome is by far the best film to use. It is not by any means the fastest film you can get, though Type A Kodachrome, with its Weston rating of 17 to artificial light, is certainly among the average-speed group. But using Kodachrome, you get color, which enhances both the pictorial and the scientific values greatly.

Christmas Camera

(Continued from Page 22)

most home movie cameras are supposed to be hand cameras. Literally, they are, for most of them are light enough to be held in the hand during filming.

But if you want really good movies—even with the lightest and smallest of 8mm. cameras—forget that "hand camera" advertising. Spend a few dollars and buy a tripod; it doesn't have to be the biggest or swankiest—just a good, rigid foundation for your camera. Then your pictures will be steady on the screen—and infinitely more pleasant to look at.

And while we're considering the camera as the eye of the audience, let's get in the habit of realizing that we can make it see whatever is most important in any scene by the simple expedient of bringing the camera closer to that object.

If you're making a picture of Junior at play, begin with a full length shot that shows all of the youngster, what he's doing and where he's doing it.

Then make additional shots, each time coming closer to him, until you wind up with a full-screen close-up that excludes everything except what he is doing, or —if the boy himself is most important —his face and expression.

One of the worst faults of the average amateur movie is its lack of closeups. You see someone on the screen; you know he (or she) is doing something interesting—but you never get a good look at the details. The same applies to shots in which the person is the most important factor; a long-shot of Hedy LaMarr may tell you she's a pretty girl with a nice figure—but only a closeup can prove how really beautiful she is!

Another thing that is vitally important is to make your scenes long enough. Dr. Einstein's celebrated theory of relativity certainly is demonstrated in home movie making, for somehow time passes at entirely different rates when you are standing with your camera in hand, pressing the release button, and when you are sitting beside the projector watching the scene unreel on the screen!

What seemed a young eternity in the photographing often turns into the briefest flash in the screening.

Of course, if you are photographing some specific action you can solve the problem by simply shooting till the action is finished, or till the camera runs down. (Incidentally, it's a good thing to

get the habit of rewinding the camera after every scene, no matter how short!)

Otherwise, count the seconds to yourself, and allow at least ten seconds (fifteen is safer, since you'll probably count too fast!) for every scene. After all, if your scene is too long, you can always shorten it with a pair of scissors; but if it is too short, there's nothing anyone can do about it.

While you're mastering these basic details, you can make things a lot easier for yourself if you stick to one kind of film. One look at your dealer's shelves will convince you that there is a bewildering variety of 16mm. and 8mm. films on the market, especially black-and-white film. All of them are good; each has its special advantages for definite types of picturemaking.

But while you're new at this moviemaking game, you're more interested in getting consistently adequate pictures than in making these finer distinctions. So while you're mastering the rudiments of moviemaking, do it from the secure foundation of using one familiar type of film for everything. Experimenting with different films and their effects can come later.

Speaking about your dealer's shelves, another good plan is to get acquainted with the dealer himself. He's likely to be a pretty good fellow, who can give you plenty of useful advice. So make a friend of him.

And for safety, stick to one dealer while you're learning; for dealers, like anyone else, have their enthusiasms, and if you go "shopping around" for advice from several of them, you may wind up in a maze of slightly varied opinions, each sound enough in itself, but sufficiently conflicting in the aggregate to confuse the beginner.

Finally, if you really want to progress in this hobby of moviemaking, fraternize with other folks who have been following the hobby longer. The best way to do this is in an amateur movie club. In most cities today you'll find at least one club — sometimes more. Your dealer can tell you if there's a club in your town, and how to go about becoming a member of it.

By all means, join it and attend its meetings. There you will see the films made by men and women who are more experienced filmers than you, and hear them tell how they did it. You'll have ample opportunity to ask them questions, and they'll gladly help you improve your picturemaking.

Then, almost before you know it, you'll find younger filmers asking *your* advice—and you, too, will be an old hand. What's more, you'll have had a lot of good pictures and a world of pleasure!

Idea Exchange

(Continued from Page 29)

held together with small screws and countersunk nuts, while as an additional safeguard, the cover of the magazine is sealed with black tape. Remove the tape, and such of the screws as are necessary to permit you to remove the cover of the magazine without bending or tearing the metal magazine.

Once you've got the magazine open, you will see that the metal guides inside the magazine, which guide the film past the photographing aperture, are in the way, so remove them, leaving only the front aperture. A section of the back end of the magazine must also be removed—preferably cut away with tin-snips—to give a clear line of vision from the aperture through the back.

At the aperture, it will be necessary to provide a small ground-glass screen for focusing. This should be a bit larger than the aperture itself. For this, I used a piece of the thin cover-glass used for mounting microscope slides.

To produce the ground-glass surface, I mixed a rather thick solution of ordinary household cleaner and water, placing it on the hard, level surface of a kitchen sink. I put my glass over this and, without exerting too much pressure, rubbed the glass in this solution until one surface took on a smooth, ground-glass finish. I dried it carefully, and inserted it in the magazine's aperture, with the frosted surface toward the lens. I held the glass in place with Scotch tape, as shown in the sketch.

Finally replace the cover on the magazine—and if you've been careful in mounting your ground-glass and in smoothly trimming out the back end of the magazine, you'll have an excellent emergency focuser. If you want a magnified image, you can have your local optician cut down a dime-store magnifying-glass to the right size, and mount it at the appropriate point above the ground-glass.

PAUL R. NELSON.

Contest Picture

(Continued from Page 23)

audience—and especially contest judges —can't be expected to give you credit for cleverness.

This is particularly bad if you suggest a point with obvious possibilties for comedy or drama—and then fail to follow through. Like the popular song of a year or so ago, you're "building up to an awful let-down."

I noticed this in many recent contest films viewed during the last few weeks. One, for instance, was based on the amusing idea of hubby being left to do the washing, and not knowing how to do it. He was clearly seen emptying carton after carton of washing powder into the family washer, and following it with half-a-dozen cakes of soap. The audience naturally prepared itself for a volcanic explosion of soapsuds—overflowing everything and everywhere.

But it didn't come.

In this particular case, one can't well blame Mrs. Moviemaker if she vetoed what would be undoubtedly a very messy scene in her nice, clean laundry. But it gave the picture a tremendous black eye as far as entertainment value and contest chances were concerned.

Similarly, if you have a point to get over, be sure you do it clearly. Another recently viewed scenario film hinged on having several members of the cast eat poison, and ultimately die. But as the film was observed on the screen, one had no way of telling that the people were in pain, and later, whether they were reduced to corpses—or just oversleeping. That impression of vagueness has marred many an otherwise creditable job of moviemaking.

Amateur scenario moviemaking is most nearly comparable to writing short stories. In this field, the late O. Henry

is universally acknowledged as supreme. Much of his success is based on the use of cleverly twisted surprise endings. You expect one thing to happen—and surprisingly something else, equally logical, but wholly unexpected, comes about.

O. Henry endings can add the necessary punch to almost any amateur scenario film. They're hard to evolve—but they're an almost infallible passport to success.

But in using them care must be taken in cutting the final sequences. Such endings depend for their effectiveness on speed and sudden surprise. If after the climax is reached, you drag your film out through a succession of conventional closing scenes, much of this effectiveness is lost. So—when you've socked the audience with the surprise pay-off (to lapse into the jargon of show business) slap on your End title quickly and get it over with!

It all winds up as a matter of cutting. And in many years of viewing and reviewing amateur films from over the entire world I've seen many a picture graced with good photography, story ideas, titles and continuity murdered by inept cutting. Many of them could have been shoved bodily into top-rank class by the simple application of a pair of shears.

On the other hand, I doubt if ever an otherwise good film has been harmed by close cutting; certainly, many of the best ones have owed their all to editing. So, if you want to make a successful contest film, brother, trot out the scissors and leave all mercy to the "also-rans!"

Movie Clubs

(Continued from Page 28)

Oliver Kaufman of the Goodman Theatre of Chicago's Art Institute; Pearl Belly of the Columbia School of Dramatics; Harry Dolson of the Actors Company of Chicago; William Brady, Program Director of Station WEDC; and Jack Emerald, Bernice Rubane and Hye Epstein of the Institute Players of Chicago.

Melbourne Shoots Comedy

Cinemateurs of Melbourne, Australia, are hard in production on a comedy, "Hired and Fired," the latest production of the energetic Victorian Amateur Cine Society, of which V. B. Alford is president.

As reported by Vice President J. F. Brooks of the Australian Amateur Cine Society, on the occasion of his recent visit to the Club's studio no less than 20 cine and still cameras were in action filming this remarkably ambitious comedy in the traditional Sennetesque manner.

It is to be hoped American amateur audiences may some day have an opportunity to screen this latest example of the humor of their fellows "Down Under."

L. A. Cinema Club Elects

The Los Angeles Cinema Club, at its meeting on December 3, elected William Hight President, James E. Davis, Vice President and Jacques Shandler, Secretary-Treasurer for 1941. The feature of the evening was the Club's annual Contest, which this year was judged by the officers of the several other Southern California cinema clubs, including the Los Angeles 8mm. Club, the Southwest 8mm. Club, and the La Casa Movie Makers of Alhambra. The winner was Mrs. Mildred Zimmerman, with her film "A Wyoming Sheep's Tale." Second place went to Dr. Roy Gerstenkorn for his unique film of tropical fighting fish, "Tropical Ecstasy." President-elect A. J. Zeman of the Los Angeles 8mm. Club, on behalf of the judging committee, announced the winners and commented on each picture before it was screened.

Washington S.A.C. Shows Serial

The December 2 meeting of the Washington Society of Amateur Cinematographers instituted something new in cine-clubbing—a serial. But instead of the usual "cliffhanger" melodrama, this was a 2800-foot 16mm. Kodachrome film of a trip around the world made by member H. P. Baines. The first installment—New York to Rio de Janeiro—was shown at this meeting, with further chapters slated for future sessions.

San Francisco Elects

The Annual Banquet-meeting of the Cinema Club of San Francisco was held December 17th, at the Women's City Club. At this meeting, the following officers were elected for 1941: John Smurr, President; E. L. Sargeant, Vice President; Milton L. Dean, Secretary, and Russell A. Hanlon, Treasurer.

Screen feature of the evening was the presentation by Harry Downard of the Sacramento Movie Club of three of his prize-winning films, "Trangatofoo," "River Rhapsody," and "Genesis, Chapter I."

St. Paul Club Handles Museum Programs

The St. Paul Amateur Movie Makers had charge of two programs at the St. Paul Science Museum during October. The first program included a round-table discussion between members Mrs. O. N. Olson, Walter Gaymon, Floyd Oliver and Harold Edstrom. Immediately following Mrs. Olson's "Travel Holiday," winner of the Club's Harmon Trophy for the best Club film of 1939, was projected.

The second program featured a demonstration of filming a home interior scene by Floyd Oliver, Vic Enquist, Dona Miller, E. O. Sickle, J. E. Lucius, Hans Reuter, and Harold Edstrom. Immediately following the shooting of this scene, the film was projected, fully edited and titled—fast work or fast thinking on somebody's part!

Radio-station WMIN donated a 15-minute period to publicizing the project, and members of the club, including Miss Agnes Marx, Irving J. Rice and President E. E. Bauman went on the air. The whole museum project was in charge of past-president Kenneth Hezzlewood, well known as a contributor to THE AMERICAN CINEMATOGRAPHER, who wrote the scripts for these programs and staged them with praiseworthy skill.

Showcase

(Continued from Page 30)

continued as a regular Agfa-Ansco product for the current winter season. This kit includes two folding reflectors constructed of tough card stock. When in the open position, these reflectors are attached to common electrical fixtures by a metal adapter ring, two of which are included in the kit.

Also supplied in the kit are a convenient exposure calculator and a handy ten-foot folding rule to eliminate any need for guessing distances. Made entirely in the U.S.A., the Agfa Reflector Kits are available through photographic dealers at 25 cents each.

Midget Flashbulbs Stronger

Since the introduction of the "mighty midget" No. 5 Mazda flashbulbs by General Electric a little over a year ago, the illuminating power of these ping-pong-ball-sized flashbulbs has been increased nearly 30%. According to a GE announcement, the newest Mazda No. 5's are averaging 4000 more lumen-seconds than did the first Mazda mighty midgets. Peak intensity has been increased some 200,000 lumens.

Eastman Offers Two New Lectures To Movie Clubs

Two new illustrated lectures—supplementing the sixteen already available for loan to camera clubs—are announced by the Camera Club Photographic Service of the Eastman Kodak Company, Rochester.

The two deal with amateur motion picture technique and criticism, and are the first of a new series of special interest to cine clubs and cine sections of "still" clubs. Lectures in the regular "still" series of the Camera Club Photographic Service are used by hundreds of United States camera clubs every year, and are particularly useful to newly-organized clubs and those which have need of a steady, dependable program service without drain on the club treasury.

New Lecture No. 101, "What Can We Learn From The Professional Producer?" describes how the amateur can adapt certain working methods of the professional to his own needs. This 45-minute lecture is suitable either for beginners or advanced workers, and is especially appropriate at the time a club movie is being planned.

New Lecture No. 102, "How Good Is A Motion Picture?" outlines a model procedure for judging movies in cine club competitions. It logically follows No. 101, and may well be scheduled for the month succeeding. The time is approximately 30 minutes.

Each lecture offered from Rochester by the Camera Club Photographic Service includes slides or prints, and a complete text to be presented by a member of the club. Lectures are available without charge, except for return postage.

Academy Awards Committees Named

Committees to consider rules for the various technical awards of the 1940 Academy Award program, and to recommend detailed rules to be used to govern these awards have been appointed by Academy president Walter Wanger. Among them are the Cinematographic Award Rules Committee, made up as follows: Ray Wilkinson, Chairman; John Arnold, A.S.C., Joseph August, A.S.C., Norbert Brodine, A.S.C., Daniel B. Clark, A.S.C., Edward Cronjager, A.S.C., Arthur Edeson, A.S.C., William Eglinton, George Folsey, Jr., A.S.C., Fred Gage, A.S.C., Merritt B. Gerstad, A.S.C., C. Roy Hunter, Thomas Ingman, Ray June, A.S.C., Sidney Lund, E. B. McGreal, George Meehan, A.S.C., Russell Metty, A.S.C., Virgil Miller, A.S.C., Victor Milner, A.S.C., Ira Morgan, A.S.C., L. William O'Connell, A.S.C., Emil Oster, Roy Overbaugh, A.S.C., George Robinson, A.S.C., Roy Seawright, George Seid, Karl Struss, A.S.C., Allan Thompson, A.S.C., Joseph Valentine, A.S.C., Joseph Walker, A.S.C., Vernon Walker, A.S.C., and Lester White, A.S.C.

The Special-Effects Rules Committee includes Farciot Edouart, A.S.C., Chairman; Fred Albin, Lionel Banks, James Basevi, John Cosgrove, John Fulton, A.S.C., Arnold Gillespie, Byron Haskin, A.S.C., Bernard Herzbrun, Kenneth Lambert, Harry Leonard, Louis Mesenkop, Jack Otterson, Elmer Raguse, Roy Seawright, Fred Sersen, Hal Shaw, James Stewart, S. J. Twining and Vernon Walker, A.S.C.

The Cherry Amateur Movie Club of Tokio, Japan, claims to be the largest movie club in the world. They boast over 1000 members.

Nylon For Wigs

Wartime conditions have played havoc with the importation of yak-hair, commonly used for wigs. Therefore MGM make-up chief Jack Dawn has been experimenting with the use of Nylon as a substitute. He reports the results are promising.

Temporary Splices

In editing film it is often helpful if one can observe the screened effect of cuts before making the final splice. This can be done by using a strip of Scotch tape ⅛ inch wide and of length equal to the width of the film. Simply line up the two pieces of film and apply the tape, taking care not to obstruct the sprocket-holes. These temporary splices will stand several runnings through projector or viewer if the tape has been carefully applied at the leading end of the joint.

Cleaning Projector Gate

Often the aperture-brush used for cleaning the gate of a projector can cause rough spots and abrasions on the gate, which in turn scratch film as it is projected. A better method of keeping projector gates clean is to use a pipe-cleaner. In addition to being softer and safer than the average brush, the pipe-cleaner can be slipped into the gate more easily. Furthermore, these cleaners are so cheap a fresh one can be used every time.

Cleaning is more effective if done with the projector's motor running and the still-picture clutch thrown out, so that the current of air from the ventilating fan helps blow away the dislodged dust. Obstinate specks of dirt can usually be removed by soaking the pipe-cleaner in carbon tetrachloride.

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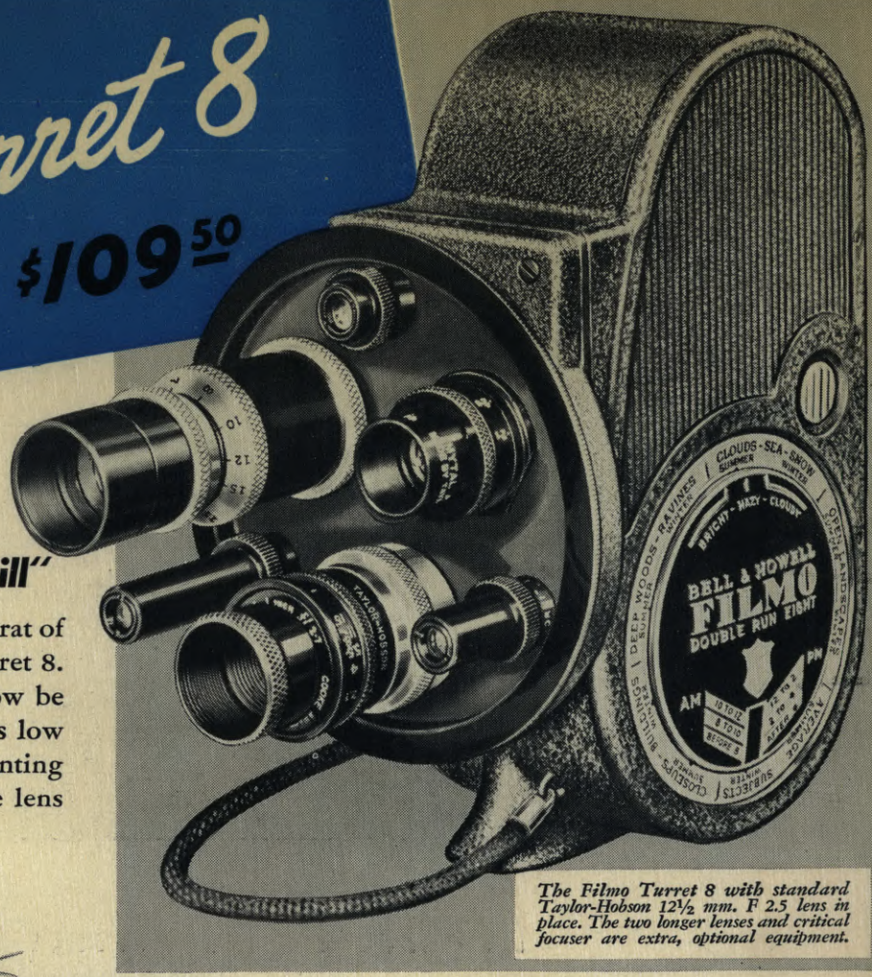

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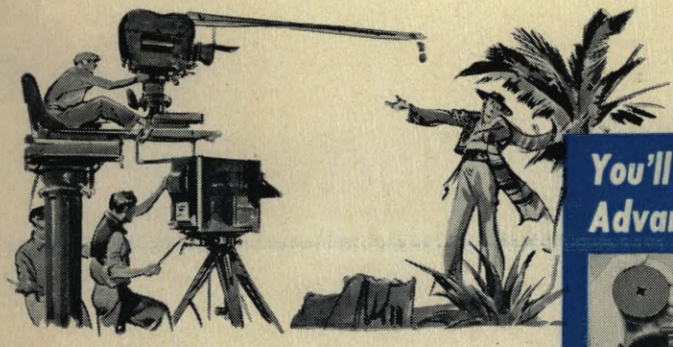

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In Hollywood, several cameras film each scene, so that long shot, medium shot, and close-up all may be recorded without stopping to shift camera position.

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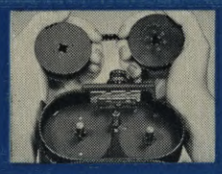

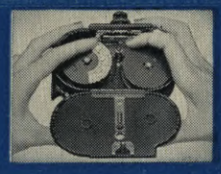

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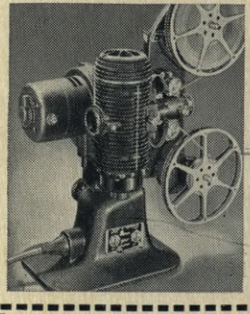

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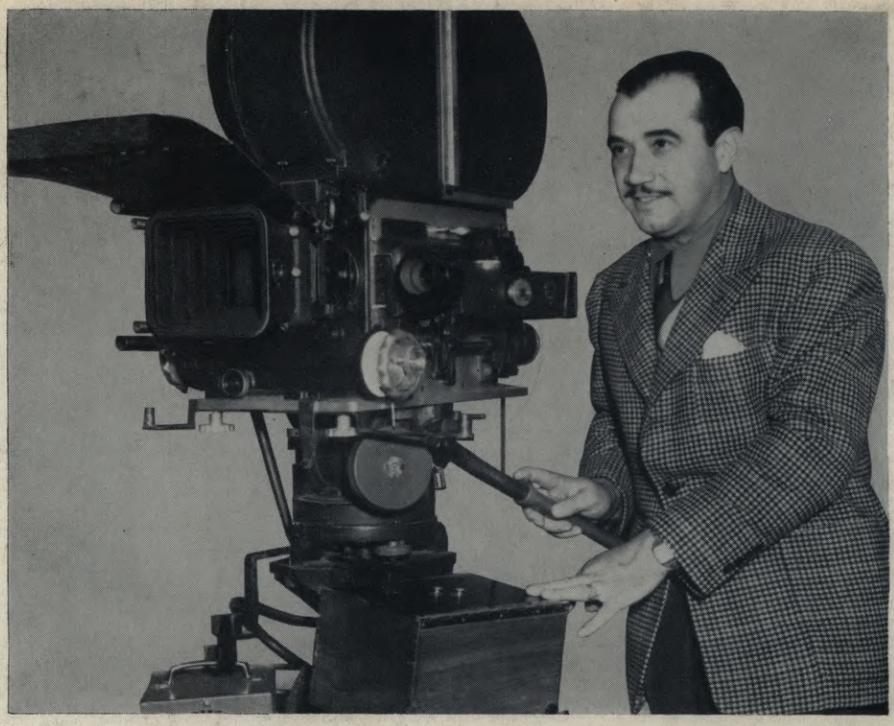

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